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Japanese Art.

THE remarkable collection of Japanese work which is now to be seen, by the permission of members, in the rooms of the Burlington Fine Arts Club, may well serve to revive the recently somewhat flagging enthusiasm of the æsthetic world for this type of representative national art. What we some years ago described, and to some extent ridiculed (and as we have always believed justly), as "the Japanese craze,"* has had its day of efflorescence and exuberance; the prices paid for *cloisonné* enamel are no longer preposterous, and few people would at this moment be prepared to echo the absurd exaggeration which put such work alongside the greatest Greek sculpture in artistic value, and considerably before the paintings of the great Italian school. It is just as well that such a collection as that at the Burlington Club should be made at a time when Japanese enthusiasm is a little better regulated than it used to be, and when we are not likely to be so flooded with æsthetic "gush" in relation to it as we infallibly should have been a few years ago. At the same time, as we have observed, waning enthusiasm may be pardonably revived in contemplating the exhibition at the Fine Arts Club. Whatever may be said about the aims of the artists of Japan, the perfection and apparent facility with which these aims are realised, and the unerring perception of the capabilities of the means and material employed, are truly remarkable, and become more emphatically so when we study such a considerable number and variety of specimens together. Indeed, we may frankly go with the Japanisers of the day so far as to say that there is no other source at present whence we can look for decorative art so completely true in its principles and workmanship as most of this is.

It is observable that the prevalent taste for objects of Japanese work in England appears to have shifted somewhat in regard to the class of objects most admired and coveted. We remember that at one of the first representative exhibitions made in England at the high tide of the Japanese craze, that of the Liverpool art-club (then just started), the bulk of the collection consisted of choice *cloisonné* enamel jars, and most of the rest of large jars and other vessels of porcelain of the various manufactures; and these *cloisonné* enamel vessels, large and small, were seen everywhere, and their praises sung everywhere for some time. But in the present collection there is but a small sprinkling of these, and a very large amount of work of a kind of which we used not to hear or see so much,—paintings for wall-hanging, smaller drawings in book form, and a great quantity of small ivory carvings. These last form, to our thinking, one of the most interesting and characteristic parts of the show.

It is in these small carvings that there come out most completely some of the qualities most characteristic of Japanese art, more particularly the peculiar humour of the people, their accurate perception as to the use of a material, and their nicety of observation in regard to animal life. Why there is not the same truth and reality in the treatment of human subjects is a point for consideration in itself: we are content at this moment with merely adverting to it. As is well known, the representation of the human subject in Japanese art is usually grotesque, and obviously intentionally so; but we hardly think Mr. Dillon is warranted in his observation in the preface to the catalogue, to the effect that it is impossible to suppose that those who were able so faithfully to portray birds and other animals in the most difficult foreshortened positions should have been unable to draw the human figure and face equally well if they had chosen to give their minds to it. There have been many examples in Oriental art of obvious inability to make really good representations of the human figure, accompanied by great accomplishment in portraying lower forms of life. And there are works in this very collection of ivories which are a witness against the Japanese in this respect. The larger proportion of the human figures are intentionally grotesque; but there is, for instance, a little group representing four different classes of persons in Japanese society, and evidently intended quite seriously and realistically, which are far inferior in every way to the animal productions, deficient in spirit, wrong in proportion, and, as representations, comparatively clumsy. The animal representations are quite extraordinary in their humour and vivacity, their minute delicacy of execution, and clever way in which the scale and proportions of the animal are apparently realised, in a perfectly natural manner although, in fact, they are altered to suit the diminutive scale. For this is one of the niceties of this miniature Japanese art, that its authors perceived that miniature carvings must not be treated with the same proportions as larger or life-size representations, otherwise they will look fragile and feeble. Accordingly, it will be observed in this ivory work, if attentively studied, that the parts in the animals are not in the same proportion as in nature, though at a first glance they may seem so: the head is made larger, the legs thicker, in proportion to the body, than in nature; and if this were not so, they would really appear less like nature, or at least would present less force and effect. One or two small carvings of cows lying down are very good examples of this; they are intended to be as realistic as possible, down to the hair-markings, which are done with infinite labour and delicacy; but in reality their proportions are all exaggerated. A part of the humour of these little carvings consists in the manner in which they are combined together so as to form the knob or pendant ornament which each group is intended to form: the convenient outline for the ornament, round or oval, or whatever outline and section it may have, is in many cases obviously roughly fashioned first, and then the group is, as it were, extracted from it, in such a way as to preserve as many points of the original surface as can be, and thus adhere, as nearly as possible, to the general shape required for the article. The freedom with which, notwithstanding these self-imposed restrictions, the designs are worked out, and made to appear as if the shape into which they are confined arose naturally from the grouping, cannot be too much admired. It is in this carefully-preserved relation of the design to convenience of form, and to the scale and material, that perhaps there lies the best and most practical lesson which our designers and makers of ornamental work may learn from these. The English and French artist in articles of ornament puts aside, in so many cases, the circumstances of use of the article, in order to give it a piquant and fanciful form, quite irrespective of its convenience to the wearer; and as to any notion of scale, or of the specialities of material, the former is still utterly ignored in English artistic work; to the latter some attention is at last getting bestowed, owing to the continued lessons read by ourselves (we may be allowed to say) and others, but it is still entirely neglected in a great number of articles far more costly in material, far less valuable as art, than these little Japanese ivories. Let our designers of *bijouterie* look at these, and learn how it is possible to give to such small and (as far as material is concerned) anything but costly objects such an amount of interest, force, and importance within such strictly practical limits as to size and shape. The endlessly varying humour of these little pieces of work must be seen to be appreciated: absurd squabbles between dwarf-like little men, animals riding on the backs of others, a man holding a fish by its two fins, and dancing it on its tail before him like a child learning to walk; skeletons beating drums, and engaged in other incongruous pastimes, &c. One introduction of the skeleton is curious, as suggesting its serious study as the basis of the figure; the carving represents a woman reclining on one side, with her head on her hand, enveloped in a long mantle, while back to back, and forming part of the same carving, reclines a skeleton in precisely the same attitude, as if giving the framework of the other half of the carving.

Another feature in the Burlington Club exhibition which may give to many visitors some

* See *Builder*, vol. xxx., p. 25-7.

new light on Japanese art is the presence, as part of the collection, of a considerable number of preliminary studies,—drawings made simply as studies, and not as an end in themselves. And these tell us a great deal in regard to the foundation of the peculiar excellence of Japanese art in some respects, and its deficiencies in other respects. We see, as we might expect, that their excellence in the drawing of birds is due, like all excelledce of this kind, to close and repeated study. We find here portions of birds, their heads in various positions, their legs and claws and wings, separately drawn in a comparatively rough medium with thick lines, but otherwise with the greatest attention to minute peculiarities of make and of outline. We find, what is still more significant as explaining the sources of Japanese art, that on the margin of some of these bird studies there are specimens of the real plumage attached by thin strips of paper gummed across them, so as to assist the purpose of the sketch, and be there for permanent reference in regard to minute detail. When we see this elaborate and systematic study of their subject, we no longer wonder that the Japanese bird-drawings should be so remarkable for truth and brilliancy of detail and power of representation in any attitude of foreshortening. We may still wonder, however, how it is that English artists who, one would have thought, must spend as much time and trouble in studies of the animals they prefer to draw, still cannot equal the Japanese in the delicacy of their representations, and in that remarkable and vivid truth of action which distinguishes them, and of which we may say not merely that it is true to nature, but that it seems to intensify nature; we learn in looking at these the character and peculiar action of the animal in a concentrated form. Two of the most wonderful specimens of this in the exhibition are to be seen among the drawings hung on the wall in the front room (the library) of the club; one of them representing a white crane among rice-blossoms stooping its head to eat: not only is the action of neck, body, and legs perfect, but the soft bloom of the white feathers is given in a way that is almost magical, and hardly looks like the work of pigments and a brush. The drawing is in water-colour. In regard to the portrayal of action and motion, the drawing on silk, of some fish, hung on the wall to the left of this, is even finer; the fish actually seem to swim; we are conscious of the resistance of the water to their fins and to the wave-like action of their bodies; we fancy we are looking through the glass of an aquarium tank. These fish must in fact have been kept behind glass, and watched incessantly before so perfect a transcript of their life and nature could be made. The capacity for noticing and reproducing the real *bonâ-fide* manner of animals in life, instead of merely getting their details correctly and making a picture of them, seems to be peculiarly developed in Japanese art, even in cases where the details are less minutely correct. For example, at the end of the exhibition gallery of the club there hangs, among other things, a coloured drawing of a tiger foreshortened, facing the spectator, all head and legs. The detail in the drawing is not irreproachable; the anatomical structure of the legs is not indicated, and there are various points of difference between the portrayed animal and the real tiger. But for all that, we feel that the tiger nature and action are given; he is not a picture, but a real brute, sinuous, and fierce, and dangerous. We hardly know of any animal painters of our own country, gifted as some of them have been, who have realised this kind of life-like action and intensely brute character. W. Huggins has done it in some of his capital chalk studies of lions and tigers, and Wolf has accomplished it very often in his illustrations of animals, which were certainly a new light in the way of book-illustration of natural history; so much so that we have heard people say they disliked them,—they were too "horrid" to give to children; the fact being simply that Wolf portrayed the real brute nature, instead of making drawing-room pictures of animals.* Neither artist, however, can be said to have equalled the best Japanese work in intense reality and in that reticence of touch and handling which gives just what is necessary to indicate the texture of fur, or feathers, or scales, and nothing further.

But the deficiencies of Japanese art are also illustrated in these sketches; for while we find all these minute studies of animal life, there is nothing of the kind in regard to the human figure. There is one large drawing, interesting enough, representing the fond father of a family receiving from his children the certificate that they have all passed their examinations successfully; and there is a single figure of a man in another part of the room, a kind of study from the life apparently, that is to say from the clothed figure; but even that is not a realistic study, it has all the element of caricature in it. There is not a trace anywhere of that study of the figure in detail on which the great European painters founded their power, and which the Japanese, as we saw, have applied so diligently to the study of birds—no drawings of bones or muscles, of hands or knees, are to be found; and nothing more is necessary to explain the fact that the Japanese cannot draw men and women correctly, or in fact (in general) in any but a ludicrously incorrect way. That they could have acquired the power if they had sought it by the same means by which they sought and acquired such exceptional power over bird and fish drawing, is almost certain, had they felt the inclination or moving to do it. And the question is, why did they never feel it, and consequently neglect human form and human expression?

It would, perhaps, be difficult to give a decisive answer to this question without a more intimate acquaintance with Japanese ways of life and thought than we profess to have, or a more detailed examination of the subject than we have space for here. But we cannot help thinking that the art of Japan tells itself in a great degree the story of the people who produced it. And if that story means any one thing more plainly than another, it means that the people who produce this art are essentially children in mind and sympathies. It may probably be said of them, as one intimately acquainted with the Chinese has said of that closely-related people:—"A serious Chinese is a rarity; a melancholy Chinese is a perfect phenomenon." We should suppose the same of the Japanese, so long as they are under the influence of their natural and inherited temperament, which is expressed in their art, and which (both art and temperament) they are probably rapidly losing under the influence of all-pervading Europeanism. The natural consequence would be, that their interest in nature would be most concentrated on those forms of natural life which appeal most strongly to childish sympathies; on the colour and buoyant movement of birds, on the semi-grotesque character which is so prominent in fishes, and other lower forms of marine and animal creation. We observed in regard to a tiger drawing just now, that it was far less perfect and showed less minute attention, than their bird and fish drawings; and this is part of the same tendency. The higher the object rises in the scale of vertebrate life, the less sympathy has the Japanese mind with it; it becomes too logical and too serious for them, and man most of all so. Their attention is concentrated on the playthings of nature, not on her more serious and elaborated work. Human passion and expression, except in a merely jocose form, is far too serious a matter for the Japanese artist, and consequently he has never made an effort to master its medium of expression, the human countenance and figure. And that, we believe, is the real reason why the Japanese can draw the lower forms of life and not the higher ones. Like all other artists, they draw best what they care most for. Nature is to them a plaything, and they treat her accordingly. This view is borne out additionally by the fact that, in their bits of landscape-painting, there is not the remotest trace of any sympathy for the picturesque and the romance of natural scenery. They draw with great delicacy the twigs on which the birds perch; they represent the moon as a decorative accessory,—"the moon rising behind bamboos"; but of the poetry of moonlight, as we know and feel it, there is not a hint.

These considerations in themselves serve to indicate what is the limit of interest which an art such as that of Japan can or ought to have for a Western society professing intellectual culture. As a decorative art it has not been surpassed, perhaps hardly equalled, anywhere or in any age. And it has, to a European generation which has necessarily lost all its spontaneity of feeling under its multiplicity of knowledge, the exquisite charm of an art quite fresh and spontaneous in its feeling and manifestations, quite independent of the art or the associations of any other age or country. This spontaneity and characteristic individuality are, however, qualities irrevocably doomed to extinction. However we may regret it from one point of view, the fact can neither be overlooked nor avoided, that Japan also has tasted of the tree of knowledge of artistic good and evil, and will have in future to proceed by choice and not by instinct in the production of art. Even at this moment it is almost notorious that a good deal of the work done in the national style is being done conscientiously and deliberately to satisfy the newly-created European admiration for it. There are persons, ardent worshippers of artistic truth of expression, who are ready to wring their hands over this fact, to lament that we have found out one real living national art, and are spoiling it with our imported artificial European taste! But the lament is useless. If we would prevent it, the Japanese would not allow us. They have themselves laid hold energetically of the fact that the European ideal is that of the future, that the Asiatic ideal is doomed. We may regret the loss of the last important survival of naïve and childlike art, but we cannot avert it, and the wiser feeling would be to learn what we can from it while its influence is still fresh upon us, and to indulge the hope that a people who have shown themselves so gifted in regard to artistic execution and expression, even under a limited and semi-barbaric culture, may do better and higher things than ever under the influence of a wider culture and of more serious social and intellectual aims. The fine collection of their works at the Burlington club, which has suggested these remarks, affords ample occasion for the indulgence of both feelings: good opportunity for the study of the past of Japanese Art; good excuse for a hope in its future.

* It may be thought extraordinary to omit Landseer from the list, but he never achieved this peculiar realism of character in portraying animals. The facts of animal form and surface he gave splendidly, but hardly the animal nature. His dogs, in particular, were half-human, sometimes wholly so, in expression.

MADRID AND THE SOCIETY OF ARCHITECTS.

Before leaving Madrid, we felt that we should be rendering but scant justice to modern effort if we failed to make some inquiry concerning the organisation and general action of the Spanish Central Society of Architects. The ramifications of this association are so wide-spread, its members so numerous, that it must exercise very considerable influence in professional matters. Local, and even the central, governments are at all times ready to accept the advice of a body which can boast of the highest qualifications, and possesses within its ranks the most celebrated and gifted architects of Spain. The rules of the society illustrate its general objects and organisation. These are comprised in a document of no ordinary dimensions, replete with flowers of speech, outbursts of eloquence, and a plentiful admixture of grandiloquent phrases which will seem most amusing to all whose experience in these matters does not extend beyond the brief, clear, matter-of-fact, dry, and business-like wording of an English book of rules.

On opening this interesting and thoroughly characteristic pamphlet, we first find that the "Sociedad Central de Arquitectos" is composed of persons of all classes, whose object is to promote the standing of architecture in the sciences and arts with which it is related; to guard the prestige of the profession; to defend its interests in the execution of whatever conception or social function it may be destined to hold and fulfil; to establish and sustain direct relationship with analogous societies in foreign countries, or with individual architects, artists, and other persons of recognised merit, and possessing special knowledge in science or in the fine arts; and, finally, to strengthen and extend, as far as possible, all that may tend to the greater benefit of the profession and the welfare of the general public.

In order to realise this vast programme, the society proposes to stimulate work of all kinds relating to the profession by offering prizes. Then there is a special periodical, which will lend its aid to all works, writings, &c., that may be judged of use to the profession. Again, conferences are to be held, where all that relates to professional instruction is discussed. When a favourable opportunity occurs, national and international congresses are to be convoked, and the concurrence of all Spanish and foreign architects solicited. Finally, the society holds

itself ready to send deputations or petitions to either central or local authorities. The members of this corporation are divided into two great classes. The first consist of *Socios*, or Fellows, who must all be qualified architects; the second, of honorary members, who are not architects, but who are either specially interested in some branch of fine arts, or in the production, &c., of the materials used in building. The Fellows are known, some as resident members, and corresponding members. The latter live away from the capital, are, of course, the most numerous, and include the foreign members. Apart from these distinctions, it has been judged advisable to divide the whole society into three great sections. These are known as the artistic, the scientific, and the "practical help" sections; and all members must inscribe themselves as participators in the labours of one of these three divisions.

The title or diploma of architect suffices to ensure inscription as candidate for fellowship of the society in the section and the district selected by the architect in question. To become an hon. member, the candidate must be proposed by three Fellows. Fellows and members are elected by a majority of votes of the managing committee, a third of the total number forming a quorum. Any unsatisfactory action on the part of the managing committee is, we find, to be submitted to the judgment of a general meeting, so that the administration of the society is based on democratic principles. On the other hand, we find a certain amount of authoritativeness which few English societies would tolerate. Thus, there is a rule which states that Fellows are absolutely compelled to assist at all the meetings of the sections to which they belong, and fulfil in all classes the duties imposed upon them. Of course, excuses are admitted in cases of emergency, but they must be held valid by a majority of the managing committee. Members of the society are evidently expected to participate actively and constantly in its labours, and may not, as is the case with many English associations, content themselves with the payment of a certain fee, without putting in an appearance from year's end to year's end. With punctuality in attendance, equal exactitude in the payment of fees is enforced. The *Socios* are actually expelled from the society if they fail to pay their monthly fee during four consecutive months. The presentation of excuses three times consecutively is considered the maximum both for the payment of fees and the performance of the various duties imposed. These rules, it will be seen, are particularly rigorous, and prove that the corporation means active work, and has no idea of tolerating sleeping members. Foreign corresponding societies and members, of recognised merit, are, however, exempted from these severe enactments. As a Spanish peculiarity, we noticed amid all these rules a sentence destined, perhaps, to encourage the candidate who might fear that his money will not be used for a sufficiently noble purpose. He is told that the entrance-fee is "destined, at first, to the funds of the society, afterwards to the library, and then to the archives of the corporation!"—a vast programme to be realised with but a small sum. We were also somewhat amused by a rule to the effect that Fellows would be expelled,—"for disrespectful conduct towards fellow-*Socios*,—an offence which might reflect on the honour of the society, and be qualified by the president as grave!" Are Spanish architects in the habit of making grimaces or throwing paper pellets at each other?

Among the minute instructions given as to the duties of the president of the society, instructions that are so obvious that they would never find their way into an English book of rules, we note that the president is to vote last at a public meeting, and first at a secret sitting. We should be curious to know on what reason this difference of proceeding is based. On his side the secretary is told to keep in order all that relates to the "ceremony of payment" of the entrance-fees! Further, he is to give an account of the work accomplished and the objects held in view by each individual Fellow,—a somewhat arduous task, we should imagine; and then he must give an annual report of the work accomplished by the society as a whole, which is to be printed and distributed to the associates and the public at large "in a convenient form." Nor is this all,—a biographical notice is to be published every year of the members who have been expelled! These must indeed be curious documents. Are they written in a sarcastic or an abusive strain? or is the tone adopted that of pitying regret for the dwarfed intelligence of individuals who could not appreciate advantages recklessly thrown away?

The number and quality of the prizes will be fixed each year, according to the state of the funds. These will be distributed as rewards for the most notable works accomplished by Fellows, and are directly connected with architecture. The rewards will consist of medals and certificates, and their distribution will be celebrated in public with *la Mayor solemnidad possible!* The rules relating to the public conferences are so typical that we must quote them almost textually as the concluding enactments of this remarkable association. These conferences or lectures are qualified as "the most adequate means of exalting the profession," and will be held both in public and in private. The object of the public lectures will be to make the masses appreciate the "important social mission" of the architect. A special committee will have for duty "to *foment* the lectures so that they may be celebrated with the greatest regularity possible." Finally, Article 80 of this lengthy book of rules tells us that "the convocation of a congress is of first importance, and necessary to facilitate the solution of the most arduous problems that are inherent to all forms of knowledge. Consideriug that these great gatherings constitute a sure means of progress, the society will resort to them on all favourable occasions, convoking the congresses at the time and in the form that will suit both natives and foreigners." Further, the society will, when invited, send representatives abroad to assist at foreign congresses.

All these facts and rules, notwithstanding the phraseology in which they are clothed, conclusively prove that in the Central Society of Spanish Architects, we have an earnest body of men, who have determined with great resolution to forward the interests, and elevate the tone, of the profession. We may be amused at sentences and rules that seem strange to us; but, at the same time, we haste to recognise, as of infinitely greater importance, the spirit of self-sacrifice that manifests itself in many of these regulations. The Fellows have undertaken the accomplishment of real work, involving regular attendance at sectional meetings, which is all for the good of the profession, and can be of but little service to them individually. In this we also note a great public feeling, a desire to approach the public, to make the outsider feel that the interests of architecture are also the interests of the community at large; that, to quote their own words, the architect *has* a "social mission" to accomplish, and that in Spain he is determined the fact shall be known. To our readers, at least, we need not insist on the truth of all this. We need not point out how much the sense of the beautiful, the record of history, the comfort of a people, depend on the development of public and private architecture. But we do maintain that all these points are not proclaimed sufficiently beyond the pale of the profession, and in this matter we may thank the Spaniards for their good example. Finally, we may look towards Spain as a nation where the profession of architecture rests on a solid basis; where the architect must have passed through a long training, both theoretical and practical, have stood the test of severe examinations, and finally earned the possession of a diploma, which confers an undoubted right to the emoluments and honours due to those who are thoroughly qualified to exercise this noble profession.

Shrewsbury Grammar Schools. — The governing body of the Royal Grammar Schools, at Shrewsbury, having decided that the present building,—a quaint and venerable edifice, in the centre of the town,—is not adequate for the present requirements of the school, and that enlargement on the old site is not desirable, the whole workhouse property, with a portion of the public grounds known as Kingsland, were purchased by them, at a cost of something like 13,000*l*. The work of gutting the old workhouse has commenced, and some portions of the building will be incorporated in the new edifice. The site is just outside the town, with the Severn, and the public grounds known as the Quarry, lying immediately below it. It is proposed that the existing school buildings shall be purchased for a public middle-class school for Shropshire and the adjacent counties.

ROYAL ACADEMY LECTURES ON ARCHITECTURE.

BY PROFESSOR EDWARD M. BARRY, R.A.*

RECENT ARTISTIC LOSSES; THE GOTHIC REVIVAL, AND SIR GILBERT SCOTT.

FIRST PART.

In Memoriam.—The late Sir Francis Grant, P.R.A.

HAVING been honoured by the Royal Academy by re-election for another term of the Professorship of Architecture, it has become my responsible and agreeable duty to address you again from this place.

This circumstance naturally leads to retrospective reflections, which, as is usual, involve a certain sadness of feeling. I must therefore ask you to bear with me, if my discourse to-night be somewhat sombre in tone.

When I delivered my first lecture to you in 1874, my initial duty,—a duty most willingly performed,—was to pay a tribute of respectful admiration and gratitude to the late Professor of Architecture, who had then resigned his chair from ill health, and in whose place I had been elected by the Academy. I refer to the late Sir Gilbert Scott, who has now departed finally from among us, in the fulness of fame and honour, on that dread journey whence there is no returning.

It has further been my sorrowful task to deplore with you the loss which the Academy lately suffered of another former professor, Mr. Sydney Smirke; and we have now one famous name the more to inscribe on the golden record of the past.

Great as has been our special loss in the architectural section of the Academy, I cannot forbear from noticing a still more general cause of sorrow, which has fallen upon us since we last met in this room, by the death of the late President of the Royal Academy, Sir Francis Grant. The great lesson, which, as it seems to me, we learn as years accumulate upon us, is that no man is indispensable. Men fall in the great battle of life, as soldiers do on the field of slaughter, and others press forward to take their places. Human affairs are so absorbing, and life so rapid, that we must not, if we would, think too much of past sorrows, but have to brace up our energies to meet the trials and duties of each day. Nevertheless, it may surely be permitted to us, on an occasion like the present, to pause for a few moments, and dwell upon the memory of those who but yesterday were here: working with us, side by side, in the great cause of art; encouraging and leading us to win, if it were possible, new victories in her pacific campaigns.

Of the position in the artist world, which will ultimately be assigned by posterity to Sir Francis Grant, it would be presumptuous in me to speak. This is not the place for such a discussion, nor am I the person to pursue it. We cannot anticipate that calm, inexorable verdict, which, sooner or later, is passed upon us all, when we have ceased to play our small part in the world's history. There are personal qualities, however, which contemporaries alone can fully appreciate, and which bring home to us the loss of the individual man we have known and respected, and who but lately was a part, so to speak, of ourselves. Every one knows how gracefully, and with what dignity, our late president discharged those duties of his high position which came under the public notice; but those who were brought into frequent contact with him, in regard to the daily business of the Academy, can alone appreciate, to their fullest extent, the finer qualities of his nature, and culture. The head of an artistic commonwealth, composed of members with the strong idiosyncrasies of individual tastes and genius, the aim of Sir F. Grant was ever to govern with his brethren, and not against them. His sway was that of the mild and excellent constitutional sovereign, and had nothing in common with the sternness of dictatorship. His proudest boast was that he left every member of the Academy a friend, and never, I believe, did he express a truer sentiment.

I have heard Sir Francis Grant called an amateur, in a manner which implies a depreciating use of the word. But, gentlemen, who would not be an amateur? Our late president had not, indeed, the early advantages of being trained under able and conscientious artists, such as those who daily act on your behalf as visitors in our schools; but when he found that the artistic flame was

* First lecture. Jan. 30th, 1879.

burning within him, he turned to the painter's profession with all his might, and to the very day of his death retained his devotion to the interests of art and those of the Royal Academy, which are, or should be, identical.

It was a matter of regret to him that his lately increased infirmities had prevented him from taking the active part he would willingly have assumed in respect of the representation of British art at the recent Paris Exhibition under the auspices of H.R.H. the Prince of Wales, to whose public spirit and untiring zeal he bore willing testimony. In the last conversation I had with Sir Francis, he referred to a medal which he had been awarded by the International jury. I promised to make inquiry, being about to visit Paris. He had received no notice from the authorities, and expressed a wish that if the award had really been made, it should be completed as soon as possible "for the sake of his family," sadly remarking that he should not himself live to receive the medal.

Sir Francis Grant was, indeed, an amateur in the sense of being a lover of art, but his devotion to it had none of that *dilettante* character which we usually associate with the word. Such as it was, it was deemed sufficient by his brethren to induce them to place him in the proudest position which any English artist can aspire to fill. Students of art may learn thereby the necessity of a love for their profession. Artists cannot be made by any academy, however liberal. Schools, lectures, exhibitions, may indeed be provided, as they are here, and their advantages offered freely and without cost to all who choose to profit by them; but there must be something more, and that something no academy can supply.

An inborn aptitude and love for his art is at least as necessary for the architect as for the painter or the sculptor, and I advise no young man to adopt the profession without it. The art of the giants of the past, whether of Classical or Mediæval days, must not be degraded in our hands, and be followed as a mere trade,—one method among many of obtaining an honest livelihood. The true architect must ever be an amateur in the highest sense of the word; he must, indeed, be an expert in the science of his work, but he must also have love of his work, and taste to appreciate everything that can claim a place in the advancement of art.

Those of you who have had the privilege of attending the annual discourses of our late president, on the recurring occasions of the distribution of prizes, will remember how earnestly he advocated the study of nature on the one hand, and on the other an affectionate reverence for the great masterpieces of antiquity. These lessons, although primarily addressed to the painter students, have, nevertheless, a special value to the architect. Our art is indeed traditional, to the greatest possible extent, so that the task of the modern architect is development, rather than invention. We can afford, therefore, less than other artists, to dispise the past and rely on ourselves alone.

Lasting fame is not easily acquired, and when a building, or other work of art, has received the admiration of centuries, we may be sure that it merits our respectful consideration. I cannot, while dwelling on this point, do better than quote a sentence from the discourse of Sir Joshua Reynolds, which our late president used as a text for the last address which he delivered to the students of the Royal Academy. After insisting on the necessity of studying antiquity, Sir Joshua says:—"The works of those who have stood the test of ages, have a claim to that respect and veneration to which no modern can pretend."

No one could have heard the address, of which the above quotation forms part, without feeling how sincere was the sympathy of Sir Francis Grant with the younger aspirants of fame, for whom it was intended. The pleasant smile, the perfect temper, the genial and yet dignified bearing, told their own tale of congratulation to the happy recipients of prizes, while they encouraged the less fortunate to further exertion. It was impossible not to feel, that, on such occasions, there spoke out the nature of the true artist, loving all that was pure, and honest, and of good report; a nature to which were absolutely impossible anything that savoured of pretence, trickery, and meanness.

Of such a nature was Sir Francis Grant, who has passed from us with the universal respect of the Royal Academy and of the public. On the occasion of his funeral, the Dean and Chapter of St. Paul's expressed their ready acquiescence in the wish of the Academy that the remains of their late president should rest beneath Wren's dome, side by side with the ashes of his illustrious predecessors, Reynolds, West, and Lawrence. For family reasons, however, this could not be. They who had been devoted and united in life could not bear in death to be divided, and thus it happened that Melton Mowbray witnessed the last tribute of affectionate homage on the part of the Academy, which is the only personal consolation in bereavement.

It is not for us gentlemen, as I said before, to anticipate the verdict of history; but we may not, on that account, pass over in silence the departure from our midst of our late president, a successful artist, a modest and unassuming Christian, and a true English gentleman, in the best sense of the term.*

THE BURLINGTON HOUSE LOAN EXHIBITION.

The long room at Burlington House (gallery III.) is adorned in the centre position of the end wall by a large Vandyck of a type not usually associated with the name of this painter: a subject of what one may call the classical romantic type, representing Rinaldo and Armida at the moment when the enchantress is about to entangle the hero "in a wreath," as the catalogue note has it. This is a work really of very ordinary type, bold and staring in style, with the usual accessories of Cupids and fish-tailed women, and very rubicund colouring. It is fortunate that Vandyck was not often tempted to indulge in this kind of performance; and one feels this the more strongly on turning to his remarkably fine portrait of the Duke of Richmond and Lennox on another part of the walls (170), the property of the Earl of Leicester. We have seldom seen a better specimen of Vandyck's finest qualities than this: not certainly one of those few works which compel universal attention, but remarkable for its combination of marked character in the portrayal of the subject, of fine arrangement of the dress, both in regard to design and colour, and brilliancy of reflected lights without the least hardness and glitter; which last quality, it may be observed, is not always to be found in Vandyck, even in what are otherwise his most powerful productions, in which we are sometimes annoyed by an over-wrought and artificial glitter and affected brilliancy. Another small Vandyck (119) which is interesting is his picture of the "Infant Christ and St. John" as two chubby little naked saints, in a manner and feeling strongly akin to that of Murillo, though of course with a very different handling. It may have been with an intentional recognition of this affinity with the Spanish painter that this little work has been hung below a large Murillo, "St. Francis of Assisi" (117), one of those melancholy ascetic figures of Murillo which give one a shiver, and seem to indicate how strong was the grip exercised by the Spanish Church (or the Church in Spain) over the free expression and spiritual life of art. The "Magdalen" (121) by the same painter is finer and less deadening in its impression, and may claim the credit of being a more suitable illustration of the subject than many of the "rosy Magdalens" of the Italian school. But somehow these works seem to leave a weight on the mind; and there is nothing in their immediate neighbourhood calculated to relieve this. Rubens's study for part of the ceiling of Whitehall Chapel (122), with fat females in gorgeous array sprawling in foreshortened perspective with the soles of their feet toward us, is a kind of thing that impresses one as almost impudent. Mr. Osmaston's Leonardo, the "portrait of a Lady" (124), is undoubted Leonardo in the drawing and expression of the face, but is certainly dirty and heavy in colour, and impresses one with a notion that it has been painted on a good deal. As a pendent to this, and a rather instructive one, we have Salaino's "Female Figure" (127), the work of a scholar or follower of Leonardo who has been able to reproduce the peculiar simper of the mouth which Leonardo's women are far too prone to, but without the master's delicacy of drawing and modelling; the figure is a half-length, undraped, and with a background of foliage, and while aiming at being poetical, is in fact a rather wooden model, conventional in style, and only pleasing from a certain richness and harmony of colour. It is curious that this work is of exactly the type which has been revived or re-invented in certain works by a contemporary school of romantic painters, who would, indeed, refuse to be called a school, but whose affinities are too marked for them to be much separated in the judgment of outsiders.* It is refreshing, in the midst of these unrealities, to come across so sensible, straightforward, and unpretentious a piece of portrait-painting as the specimen of Sir Antonio More, "Portrait of a Man" (123), which is really the best piece of art, taken on the whole, on the end wall of the room. Our respect for this painter is further emphasised on noticing his three-quarter length of "Donna Maria de Portugal" (137) a little further on: the rich dress of the lady, in which she is enveloped up to the chin, has been a difficulty with the painter, concealing as it does all the grace and flow of the figure, and he has simply devoted himself to making the most of it, after his manner, as a means of rich decorative effect, but still subordinate to the countenance. In regard to the latter, the painter has had everything in his favour, for there is a marked individuality both of expression and effect in this sallow, plain, but not unpleasing face, with strong black eyebrows. Of the other portraits in this gallery, there is an ugly and stiff, but powerful portrait of a grim old lady ("very like mamma," we heard an undutiful young woman remark of it), labelled as of the "Florentine school"; there is a work of Paris Bordone, called "Portrait of a Female" (148), the word "lady" being prudently or prudishly denied to this person, who is, in fact, the well-known large-made blonde who appears in all Bordone's pictures, and very likely was his mistress as well as his model, though it seems hard to carry remembrance of female frailty through so many centuries, especially considering the amount of bad example the "female" must have had to keep her in countenance in those days. But after Vandyck's Duke of Richmond (if not before it) certainly the finest and most remarkable portrait is Reynolds's "Miss Kennedy" (173), another "female," it is to be feared, better known in her own day as Polly Kennedy; a work in which Reynolds seems to have taken a more than common interest, and which in a letter quoted in the catalogue he describes as having "more grace and dignity than anything I have ever done," adding his intention to try different dresses in order to make the most of his beautiful sitter: "the Oriental dresses are very rich, and have one sort of dignity, but it is a mock dignity in comparison with the simplicity of the antique." The dress which Reynolds did finally adopt has more of Oriental than of Western character. His judgment in regard to the merit of the work in dignified expression was not erroneous; the pose of the head and of the whole figure is noble and at the same time graceful in the highest degree, nor would it be possible to find among all the portraits of high-born and acknowledged ladies whom Reynolds painted, a finer and more aristocratic face than this, or one more expressive of dignity of mind. There is something really strange and pathetic in the contrast between the appearance of the painting and the history of its subject, and of the trouble she was under at the time it was being painted, for it was at the very date of her sittings to Reynolds that she was engaged in heroic efforts to obtain pardon for her brothers who were condemned for murder,—efforts apparently made with almost as much devotion and self-denial as those of Jeanie Deans.

Of the two large Tintorettos (or Tintoretti) which are to be seen in this gallery, the larger, the "Hunting Scene" (141) will hardly interest any one much; in Earl Brownlow's "Christ Curing the Paralytic" (144) there is a fine though mannered composition, and an equally mannered painting of the various heads, all of which are effective, and effectively placed as contributions to the whole, and the handling is very broad and full; but reality is wanting, it is an academical work. Gian Bellini's "Adoration of the Shepherds" (142) is a curious example of naïve realism, according to the painter's view of realism, in treating a subject of this type, and also for a pleasing simplicity

* To be continued.

* Those who know such productions of Mr. Rossetti's, for example, as the "Venus Verticordia" will readily understand why this picture of Salaino's suggests a recollection of them. This and others of the class were, however, produced at an earlier period of Mr. Rossetti's career, and he has, we believe, materially advanced from this conventional standard now, but it is still the plaything of others who have in the first instance drawn their inspiration from him.

and artlessness. Realism of a less pleasing type is illustrated in Giorgione's ridiculous painting of "The Resurrection" (145), where the guards are represented by a couple of Italian *spadassins*, and the principal figure ascends from the tomb with no action, and as if drawn up by invisible wires. It is sufficient to look at this picture to come to the conclusion that Giorgione, like Malvolio, "would not hear of godliness," and, in fact, it suggests very much the idea that the wild and libertine artist painted it for a joke. There are two or three very fine landscapes in the gallery; the Gaspar Poussin (147) is a grand specimen of the artist's finest qualities, solid and powerful in tone, noble in composition. Opposite this, on the other wall, is a large landscape by Callcott, which strikes us with the greatest admiration, and makes us marvel at the freaks of fashion in art which have for some time put the works of this painter out of memory and remark. Compared with much recent and brilliant landscape-painting, no doubt this picture would be pronounced colourless and brown, but it is in reality not a whit more so than some of the finest works of recent French landscape-painters, who are admired on strict æsthetic principles, and has more atmosphere and more tenderness of gradation in the tones and distances than have many of the said French works which are thus admired. The general treatment of the masses of trees is beautiful in regard to drawing and the balance of near and distant tints, the relation of which is at least in the highest degree truthful, though perhaps no separate bit is positively natural in colour. The perspective into the woodland path in the centre of the picture is worth notice, and as completely successful in this way as anything of Constable's.

A very large study of still life by Velasquez (162) is of interest as coming from his hand, but not equal in this way to the works of the greatest masters of this kind of painting, examples of which are to be found on a great scale in Gallery V., in the shape of the four great "market pieces," as they are called in the catalogue, by Snyders, lent by the Duke of Newcastle. These are *objets de luxe* rather than pictures in the higher sense; that is, they are things to hang on a staircase as imposing pieces of furniture. The painting in detail is wonderful in some of them; the first piece (230) is the finest, and is a splendid example of realistic detail of this class. In the Velasquez example we do not find the same success in the treatment of fruit and game, but Velasquez is himself again on the large brass vessels which form an important item in the picture, and which were always a peculiarly favourite accessory with this painter. Among the rest of the works in Gallery V. is a fine Richard Wilson, lent by the Earl of Dartmouth, and some remarkable horse studies by Stubbs; and Vincent's "View of Yarmouth" (248) calls for a special note, as one of the finest productions of the set of painters who have been (rather absurdly perhaps) called the Norwich school; this is a landscape of unusual truth and power in regard to the perspective, both of tones and delineation of distances, and has the additional merit of combining artistic power with a perfect representation of the character of the country portrayed.

THE CULTIVATION OF WASTE LANDS: AND A PRACTICAL EXAMPLE.

IN a letter on the subject of "Waste Land," in the *Builder* of January 11th, the writer, under the signature of "P. J.," asserts that "there is a fallacy in supposing that land that would yield sustenance wages to the labourer for its cultivation is allowed to lie waste."

This assertion, if admitted, of course knocks on the head all that has been said in our columns as to the employment of idle hands on idle grounds. It is, therefore, desirable to see whether the "fallacy" be that of the advocates of such employment, or that of "P. J."

The fact is, that this statement presents a typical example of the failure of many persons who have given more or less study to the laws or phenomena of political economy to grasp the fact that these laws constitute only a portion of the conflicting forces which go to make up human action. And when, as in the present case, instead of observing phenomena, and explaining them by the action of laws, a writer takes the bold course of deducing what he calls phenomena from an *à priori* view of the action of what he regards as law, he falls into signal error.

That there is a tendency to an economic balance no observer will deny. Nor does a complete study of the writings of the man who was not only the first, but the greatest, writer on the subject lead the opinion a step beyond that sound basis. As far as human action is guided by a thoroughly intelligent conception of economical law, we may at once accept the statement that land that would repay the labourer for cultivation would not be allowed to lie waste. But how far does such a conception exist? How far does it form an imperative rule? If a writer who undertakes to rebuke another can assume such a monstrous postulate as the imperative action of such a law, what will be the case with those who have not even got thus far in their economical education?

In the first place, as regards the quality and the location of land, there is no question whatever that alongside of many of the disturnpiked roads of England lie strips of rich and fertile soil, everyway equal to those which bear golden crops on the other side of the hedge, and which are devoted to grass and thistles. There can also be no doubt that if, at the close of his eight or nine hours' daily work, the skilled labourer were to apply a part of the fifteen or sixteen hours in which he claims to do as he likes to this land, he would add the value of that labour to the wealth of the country and to his own income, with the addition of the thirty or forty fold return yielded by nature. In some few places this is done, notably by the side of the former turnpike-houses. If we took only a width of 2 yards as the average of land which is now waste, not because it is of its nature unproductive, but because it has been taken out of cultivation in anticipation of being required for roadway before the introduction of the railway system changed the course of the great stream of traffic, we have upwards of 14,000 acres, admirably suited for growing potatoes, waiting to be tilled.

Again, if we look at that enormous area of tertiary deposits, for the most part left waste, which extends from a little south of the Thames to Christchurch Bay, who can pretend to say that if it would yield sustenance wages to the labourer it would not be allowed to lie waste? How is it that here and there, on the domains of enterprising proprietors who might be named, the waste is turning into lucrative wood land? What is the difference, in soil or in accessibility, between the property of the Earl of Malmesbury, near Christchurch, which is now thus being turned into a source of future wealth, and the hundreds of acres of bare heath that surround it? With the very minimum of labour this land may be made to grow wood. We do not say what portions of it might produce under sewage cultivation, because that would be only an estimate; but what does it yield now, when duly tended? This soil is the cradle of the *coniferæ*. The ruder kinds of pine-wood thrive, indigenous and self-sown. The noblest kinds would thrive under a care which they would well repay. From such land an average of four loads of timber an acre may be annually cut. In 1874 the price of larch timber in the Earl of Seafield's woods, at Strathspey, is stated in No. 290 of the *Edinburgh Review* to be 1s. a cubic foot. There would be a return, at this rate, of 8*l.* per acre per annum from this ground. Ten shillings per acre per annum would be a large allowance for the cost of labour. Here is land allowed to lie waste, not in square yards, but in square miles. The Adour, the Arun, the Avon, and the Stour drain 500,000 acres of tertiary sands, the greater part of which is untilled waste, the rolling character of which is such as to make easy the work of the drainer. Is that land that will not yield sustenance wages to the labourer?

The fact is, that in England we have never yet stated the problem of how to make the most of the spare land. Leaving out all land so highly cultivated that it can afford a fair rent, as well as all that proprietary and residential park land, which is the chief picturesque glory of our country, where,—outside the columns of the *Builder*,—has the question even been systematically mooted? As to the sustenance of the labourer, we are the most extravagant people,—at all events, in the old world. Not only does the labourer live on so costly a grain as wheat,—costly when we compare its nutritious or flesh-forming elements with its bulk; but he wastes at least one-fourth of the nutritous power of the corn by insisting on white bread. He makes that remaining three quarters of as little use as possible by eating his bread as new as he can get it. If a sack of wheat, weighing 240 lb., is sent to the mill, the loss upon grinding is only 4 lb.; the charge for the same being 1s. 6d. But out of this, 180 lb. of fine flour only are procurable, and it is in the 60 lb. that are rejected as bran and other products of bolting that a main part of the nitrogen of the seed is contained. Wheat only contains 14·6 per cent. of flesh-forming food, together with 70 per cent. of heat-giving food. Barley and rye contain each a trifle less. But oats, the food of the strong and wiry Scots, contains 17 per cent. of flesh-formers; and if oatmeal be consumed, in the form of porridge or of bread, the feeding property is nearly double that of the fine hot wheaten bread which the English labourer demands. As far as bread stuff is concerned, the working people of this country pay at least twice what they would pay if the principles of political economy had sufficient force to induce the father of a large family to make the experiment of trying a new food for a fortnight! To supply the 80 drachms of flesh-forming food which are required for the daily rations of an English soldier, as much as 1·7 lb. of wheat is said to be required. If we suffer 25 per cent. of the nutriment to be lost, as before stated, 1 lb. of oatmeal would contain nearly an equal amount of flesh-forming food.

It is not only in the choice of the cereals that the tyranny of custom or of taste laughs to scorn the inflexible laws of political economy. The soil and climate of England will produce, in every corner of country or even of town, a food that is nearly 50 per cent. more rich in nitrogenous compounds even than oats. Oats yield 17 per cent. of flesh-formers. But beans contain 24 per cent. The cultivation of pulse, as a staple article of human food, is almost unknown in this country. In the rich vale of the Severn, indeed, the air at certain seasons is heavy with the delicate fragrance of the bean plant. Fields of as much as two miles in length by half a mile wide, unbroken by a hedge, are covered in some parts of Gloucestershire by this crop. But it is usually left to be reaped; and is gathered in as a black mass of pea-straw, for the sake of the dried seeds. Eaten when young, these broad beans are as delicious as they are nutritious. The splendid flowers of the scarlet runner form an ensign hoisted by another species of this rich family of contributors to wholesome diet. But it is only the young pods that are generally eaten. Then there are the French haricot beans; the garden or field pease; and other congeners of the same group, which in a soup, a *purée*, or a porridge, may be made to yield a delicious food. In Southern Italy a large proportion of the diet of the peasantry consists in pulse; and that on plains where grows the white Apulian wheat that yields the finest wheat flour in the world. But wheat flour, though there moderate in price, has to be paid for. The garden yields pulse, for more than a third of the year, at a price too low to need any stint in the healthy appetite of the children. The English cottager who would cultivate pulse, and exchange wheat flour for oatmeal, would grow fat and flourishing, with good clothes on his back and money in his pocket, alongside of the man who, receiving the same wages, goes to the baker for his daily loaves. How can any one talk seriously about land that will not yield sustenance to the labourer, in face of such facts as these?

It will thus be seen that those parts of England are very rare in which land will not yield an ample sustenance, either in meal or in malt. Where wheat will not thrive, oats may. Where oats are not available, beans are sure to flourish. Or if money, rather than actual food, be in request, there is the unsleeping industry of the forest, that only requires fair play to produce a steady income at a very low minimum of labour. So much for the land. Operations of draining, of planting, of manuring, on whatever scale they may be undertaken, will repay the cost within a few years, and yield 50 per cent. return on the outlay for ever after. These are not imaginings; they are simple rustic facts. Of the total acreage of England only three-quarters are now under crops, bare fallow, and grass. In Wales, the proportion is 60 per cent. In Ireland, it is 78 per cent. In Scotland, it is only 26 per cent. Out of the 77,828,947 acres of the United Kingdom, only 47,263,165 acres were under cultivation, including fallows, in 1877. Out of the balance of thirty millions of acres have to be deducted the areas of towns

and cities, the sites of roads, railways, rivers, canals, lakes, and ponds, and whatever land may, at the present moment, need as much skill as has been devoted to the 6,000 square miles of fenland in order to fit it to support and to repay cultivation. But when all is allowed, what a margin remains. Nor do we believe that the "laws" of a quasi science that breaks down before the simple question, "Why does every cottager, as a rule, pay twice as much as he needs do for the food of his family?" are to be taken as quite conclusive as to the impossibility of securing a fair return from a good slice of these thirty millions of acres.

So much for waste land. How as to hands? The last report of the Local Government Board that we have at hand at the moment is that for 1875. That gives a return of 832,370 paupers on January 1, and of 784,006 on July 1, 1874. The total amount expended in relief of the poor in that year was 7,664,957*l.*, being our heritage from the proceedings of King Henry VIII. Of these, 114,324 in the winter months, and 101,601 in the summer, are able-bodied paupers. Of course it will be said by a certain school that nothing would be more erroneous in principle than to turn this great army on to some of those works of drainage, embankment, reclamation, and irrigation, that make the difference between an annual yield of nothing and one of 40*l.* per acre. The labour market would be disturbed by any such action. An industrial population of nearly six millions (it was 5,137,725 for England and Wales in 1871) would be cruelly wronged by setting 100,000 more sturdy pairs of arms to work, instead of feeding them for doing nothing. But that would be a miserable management that could not get a pound's worth of work per week out of each able-bodied man. And there would be a saving to the country of five millions per annum, or of two-thirds of the poor-rates. Look at it on the principles of the most severe and stringent economy,—only apply these principles to facts, instead of talking of them in the vague. Let us say that the artificial addition of 100,000 labourers to the working class of, say, 6,000,000, would reduce the value of the earning power of each of the latter by one-sixtieth part. Taking that earning power,—not the producing power, but the consumption of wages,—at 2*s.* per diem for 300 days in the year, each worker would theoretically lose one-sixtieth part of 30*l.* in the year. But the rate of incidence of the poor-rate is 6*s.* 6*d.* per head per annum, on the 23¼ millions of estimated population at the date cited. This would be reduced, by the product of the labour proposed, to 2*s.* 2*d.* per head.

Now, even if we suppose that we had unjustly inflicted a tax of 10*s.* per head on the working classes, it would thus be reduced to 5*s.* 6*d.* per head in the first instance; while every other unit of the population is 4*s.* 4*d.* per head the better for it. That would be a good reason for reducing the burdens on the industrial classes by 5*s.* 6*d.* per head per annum, were the loss actually proved. But the fact would be, according to all experience, that the stimulus given to consumption, and to production, by the productive employment of this added body of able men, so far from lowering, would raise the price of labour, and add not only to the wealth of the country, but to the well-being of the working classes.

Here, however, we have but one item in the account. We do not forget that the 6,000,000 workers are not all able-bodied men, but must include all classes. We are not attempting prediction, or affecting accuracy of estimate. Our figures are only intended to show approximately what is the case. But if we consider that only 1,200,000 out of the 6,000,000 are picked and able-bodied men, we must rate their individual average earnings at much above 30*l.* per annum; and in the question of time we must remember that the lower the rate of remuneration, the wider the margin of unemployed time. Let us take 1,200,000 picked workmen, working fifty-two hours and a half per week, what a fund of unemployed labour is there. Tempt the workman to make up the old rate of sixty hours per week by volunteer labour,—by tilling his garden, by trimming the trees, by steady occupation of a remunerative kind in any form that will best suit his powers. What would be the effect of this? It would be equal to the addition of another army of above 90,000 picked labourers to the productive power of the country, an addition which, when we further add the extra efforts of the 4,800,000 less able workers, will be at the least doubled. And their work,—volunteer work,—is all sheer gain. It is not even taken out of the capital or the strength of the workman. For this moderate tax on his time he will be able to afford much greater comfort, to eat more meat, to drink a stronger strike of ale, to lie under an extra blanket. He will still have fourteen hours per diem for six days in the week, and twenty-four on the seventh, or 108 hours out of 168, for sleep, refreshment, improvement, or amusement. What an enormous reserve of power is thus under our hands it is not easy to calculate.

We are not advocating any utopian scheme. We are not proposing any change in the laws, or any heroic change anywhere. But we are indicating the limits of the question. On the one hand we are met with the hard, blank, cold denial that any improvement can be made. Profit and loss is said to be the inexorable law of the world; a law that not only avenges itself, but is always self-acting and always exact. Suggest any improvement, of any kind, the reply is always the same,—"If it would pay, it would accomplish itself. If it will not pay, it is mischievous to attempt to introduce it." That is, reduced to its true nakedness, the argument which we cited at the commencement of these remarks. We reply that the assumption is utterly false. A sense of profit does not rule human action. So far from acting like hunger, or any natural instinct, it requires a considerable degree of education to be imparted before it acts at all; and then ten to one it acts wrongly. For example, as to the food of the cottager. It is an economical heresy of the direst nature to assume that a man will rather pay ten shillings for food that is not the most nutritious than five shillings for food that is; that he will not even take the trouble to try whether he does not find himself better nourished and more comfortable and strong on the cheaper food. Nevertheless, this is what occurs, every day, in every poor family, with hardly an exception. Therefore, when we show how easy it is to add to the income of the cottager, and to the wealth of the country, it is with but feeble hope that much good will result from the advice. But, at all events, we have said enough to explode the puerile fallacy of the economical *non possumus*.

We hope not to be misunderstood. We remember, and we remind our readers of, the miserable failure of the *ateliers* in Paris, and of other efforts anticipated to organise labour in France. We have seen with our own eyes the ludicrous though lamentable swindle of the famine works in Ireland. These are cases in which failure has been the natural result of entrusting the direction of labour to incompetent hands, generally to those of the loudest-tongued patriot, as he described himself. But we have also witnessed facts, no less conclusive, that weigh in the other scale. We have witnessed the gradual,—and not very slow,—transformation of the agricultural labourer, who, at his wages of 9*s.* per week, could hardly do 60 foot-tons of work per diem, into the sturdy, well-fed railway labourer, who, at 2*s.* 9*d.* per diem, turned over his 128 foot-tons of work without distress. Wise direction, good food, and that sympathy which is the best bond between master and man, effected this change, to the great advantage of both. The country magistrates, indeed, remonstrated at the raising the rate of wages. But the work had to be done. There was but one way of doing it properly; and the country was the gainer all round; so much the gainer that in the remote districts of Wales or of Cornwall the price of transport was reduced by five-sixths, and the country markets were brought into relation with those of the great centres of production and of consumption.

In how many cases might not a similar effect be produced under the guidance of competent advice? It is not against, but with, nature that such improvers have to work; with the human nature of the workfolk, so soon as they begin to understand what is going on, and with the physical nature of the inorganic and organic world. It is only the other day that a paper, based on a memoir in the "Annales des Ponts et Chaussées," was received by the Institution of Civil Engineers, giving an account of some of those reclamation works on the *Landes* of Bordeaux, which were suggested by one of our own contributors in 1855. More than half a million of money has been laid out, under State direction, in draining, in sinking wells, and in making roads through 1,500,000 acres of land of much the same superficial character as that between Southampton and Christchurch. "Everywhere and in every respect," says Mr. George Wilson, "the results of forest cultivation are highly satisfactory." In 1877 the timber on a plot of 11 acres, which had been planted in 1850, was sold for 192*l.*, or 17*l.* 9*s.* per acre. The value of the plantations, after thirty years' growth, is estimated at nearly 15,000,000*l.* In another forty years it will have reached 49,000,000*l.* Excepting the annual cost of supervision and tendence,—which is not given, but which is not high,—this is the result just secured by our neighbours on the other side the Channel under State interference. Forty-nine millions sterling produced, chiefly by nature, in two generations, for the first outlay of 540,000*l.*, and the annual employment of an amount of labour which probably will be covered by the sale of turpentine, of lop, and of thinnings. And this from a hungry, fever-smitten, ague-haunted soil, as to which, as we have seen it lying waste, it might, with some show of reason, have been urged that it "would not yield sustenance wages to the labourer."

It is quite certain that the cultivation of the Hampshire wastes is a far easier problem than was that of the desert *Landes* of Gascony.

NOTES ON ST. PAUL'S CATHEDRAL.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

MR. F. C. PENROSE, M.A., at the last meeting of the Institute, read the following paper:—

The Crypt—Records of Old St. Paul's.

For the last seven years, or thereabouts, the Dean and Chapter have endeavoured to make the crypt both useful for ecclesiastical purposes and more worthy as the burying-place of illustrious public characters and artists than it used to be. Until lately, only a small part has been shown to the public, and, with the exception of the immediate centre, containing the tomb of Lord Nelson and the contiguous chamber, in which the sarcophagus of the great Duke of Wellington is placed, it was dark and uncared for. Much of it was devoted to stowage of materials, a large portion of these being the scaffoldings which were used for the school-children's festival, and the remainder serving for various necessary purposes of the cathedral. Now, with the exception of these last, the whole has been formed into what may be called a Campo Santo. The walls have been cleared of the soot of generations, and the floor is in the process of being laid down with mosaic tesserae in various colours and of classical design. About 4,000 square feet have already been so treated, 3,000 more are decided on but not yet executed, and by degrees the rest will no doubt follow. The eastern part has been arranged for divine service, which takes place every morning and evening at eight o'clock, and on Sunday mornings the Holy Communion is there celebrated, viz., on the site of the ancient chapel of St. Faith. Around this part of the crypt have been arranged the remains of certain monumental effigies which were rescued from the old cathedral, and which Dugdale's accurate views taken before the Fire enabled us to identify. They have each been mounted on a simple kind of altar-tomb, with the name inscribed. They record names well known in the sixteenth century, viz., Hewett, Cockayne, Hatton, Heneage, Wolley, Baskerville, and some others. The central nave in the crypt has now been opened for its full length of about 450 ft., and the bronze car which conveyed the body of the Duke of Wellington to the cathedral in November, 1852, and which for a number of years occupied a chamber near the centre, and terminated the part shown to the public, has been removed to the extreme west. This central portion of the nave is now divided from the side aisles, to which, with the transepts, the workshops and stores are relegated by wrought-iron railing. It was the opening the western crypt for this purpose that led indirectly to the discovery of the remains of Old St. Paul's. One of the arches contained the huge gas-meter, which entirely blocked it up. It was essential, not only for proper appearance, but for light and air, that this should be removed, and a pit was dug for it on the outside to the south of the nave. This pit is carried down to a depth of about 10 ft. from the ground-line of the churchyard. The foundations of the cathedral walls go considerably deeper, so that there was no question of undermining them. Just on the edge of this pit, and about 9 ft. from the surface, was found a piece of stonework evidently *in situ*, which had clearly some connexion with

the old fabric. The mortar was different from that used by Sir Christopher Wren, and from its position it could have nothing to do with his work. There was embedded in it the frustrum of a column, apparently Norman, from which it seemed that this piece of foundation belonged to some of the fourteenth-century work, and that the Norman fragment was old material derived from the original choir, or perhaps from St. Faith's Church, demolished in 1256. This find, then, seemed in all probability a relic of Old St. Paul's. I fortunately had in my office a copy of the plan contained amongst the Wren Collection in All Souls' Library, Oxford, which represents the new cathedral placed upon the old,* and from this plan I assumed I had hit upon the foundation of one of the piers of the passage leading from the cloister into the chapter-house. I reported my discovery to the Dean and Chapter, and obtained from them permission to make a few more trials for other parts of the old structure.

Guided by the plan, I sunk a pit more to the westward, to try for one of the buttresses of the chapter-house, but with no result. The earth even showed no sign of having been disturbed. I then tried backwards towards the east, thinking that I might at least get hold of another part of the cloister. The plan again proved faithless; but a little more burrowing towards the east revealed a fragment of what I thought might be a buttress of the main transept wall,—that is, of the western wall of the south transept. This was about the same depth below the surface as the first discovered fragment; and this, whilst it gave clear evidence that something was amiss with the plan, pointed out a more likely place for the next trial, and the result at once appeared to prove the correctness of the hypothesis, for the next morning the clerk of works came to tell me with much satisfaction that part of the cloister-wall with its buttresses had been found, and the south-east internal angle soon followed. These foundations, too, were at no great depth from the surface, and their excavation was no great difficulty. Two of the great buttresses of the chapter-house rewarded our further investigation, but these were all, for the other buttresses of the chapter-house had been entirely rooted up, partly for the requirements of the new structure, and partly for the drains. We also found the external south-east angle of the cloister and part of the street wall, and the internal south-west angle, and some traces of the external angle corresponding to it. The pavement in several places exists, composed of squares and lozenges of Purbeck marble, and is about 14 ft. below the pavement of the present cathedral, but very nearly on a level with the street to the south. These remains belong to the lower story of what Sir Christopher Wren has described as "a chapter-house of a more elegant Gothick manner with a cloyster of two stories high." The historians of the cathedral inform us that the chapter-house was begun to be built in 1332; but when we study the detail of the mouldings, which are very small and refined, it is impossible to attribute so early a date. Nevertheless, both Hollar's view and some remains of tracery which were dug up during the excavations point to a general design which would almost fit in with the period assigned. The probability is that the work is actually of the end of the fourteenth century, but that an earlier design had, with some modifications, been carried out.

The vaulting of the chapter-house, although the building was octagonal, was arranged (in the lower story, at any rate) so as to rest upon four central columns. This is shown in all the plans; and the base of the middle vaulting shaft is curiously divergent from the others which follow the octagonal arrangement for this purpose. All the chapter-house shafts and bases are of Caen stone, but those of the cloister are of Purbeck marble. All are extremely well cut and elegantly profiled.

Fearing the effects of frost upon this newly-opened masonry, I had them twice coated with beeswax, dissolved in spirits of turpentine, and thus far they seem to have well resisted the action of the weather, whilst some of the stones of the same material which, not being *in situ*, were left to themselves, have been much affected by it.

A plan is submitted, showing the whole of our discoveries, to a scale of 3 in. to 10 ft., and all the mouldings are given more at large, the bases full-size, the others half-size. These discoveries show the angles of the cloister, and enable us to recover with great precision the centre of the chapter-house. When these are compared with the Oxford plan, there is found to be an error both southwards and eastwards, amounting to about 10 ft. in each direction. In other respects the cloister is accurately blocked out, and the length and breadth are in very close agreement with the dimensions. It is a matter of very great interest to ascertain, if possible, whether the plan must be given up as hopelessly inaccurate to at least the above extent, or whether there may not be what may be called an occult reason for the particular error I have noticed, which does not vitiate the plan altogether. I have prepared a plan of the existing cathedral, from measurements to the same scale as the Oxford plan, and find that the two agree very well indeed. This is, therefore, presumably in its favour. Then we have to consider what was the object of this particular plan, not the detail of the architecture, which is merely sketched on the plan, but the exhibition of the divergence of the axial lines of the two buildings.

There are great peculiarities about this plan. The line which is shown for the west front is very considerably out of square with that which is given as the axis of the cathedral: neither is the axis of the transept square with it. The latter is shown as almost parallel to the west front. The east end, again, is an oblique line. Let us compare this plan with other plans of old St. Paul's. I do not undervalue Mr. Ferrey's careful and elaborate plan, but am considering original documents only. The plan is very nearly to the same scale as that given by Dugdale, engraved by Hollar, but there are some differences which show it to be an independent document. There is also among the All Souls Wren Collection drawings a larger plan on vellum, but it is not itself original, and the following account of its authorship has been given me:—"The plan is on vellum, and Elmes, in his catalogue of Wren's drawings, says of it, 'Mr. Gutch tells me that Mr. Buckler copied it for Sir H. Englefield.'" Nevertheless, it seems from the above to have been copied from something else, perhaps from an old plan which was falling to pieces, and it certainly represents the cloister and chapter-house with great accuracy. I will call this the Oxford plan No. 2.

There is also a small-scale plan, engraved by Loggan, and published by Thomas Bowles, St. Paul's Churchyard, about 1714, but I think the engraving itself must be considerably older. Thus we have, at any rate, four plans to refer to, and there is the tradition preserved by Stow that the old cathedral was 690 ft. long. This statement Mr. Ferrey has discussed at length in his contribution to Mr. Longman's work, "The Three Cathedrals," and, I think, has very justly come to the conclusion that the first figure is an error, and that the proper statement should have been DXC. instead of DCXC. This extreme length is at variance with all the plans, although some approach to it is made in the Oxford plan No. 2, which appears to give the length of 660 ft. The discovery of the cloister enables the scales put upon these drawings to be tested, and they do not any of them bear the test very well. The Oxford plan No. 1, however,—that which shows the two cathedrals,—when a proper scale is made for it, from the full length of 507 ft., that is, from the extremity of the present apse to the Western Towers inclusive, shows exactly the proper measure for the south wall of the cloister, which is a strong presumption in favour of the general correctness of the drawing, excepting as to scale, which may have been added by a different hand. The simplest test which can be applied to the plans in comparing them *inter se*, is that of the proportion between the nave and the choir taken from the centre of the tower. These are the results:—

	Nave.		Choir.
Hollar's plan	1,000	...	904
Oxford plan No. 1	—	...	880
,, No. 2	—	...	998
The small plan (Loggan's)	1,000	...	962

There are thus two pairs which hold together pretty fairly, Hollar's and the Oxford No. 1 in giving mean proportion of 1,000 to less than 900, and two others which hold well together in giving a much larger proportion.

There are a considerable number of perspective views extant, and if we examine these together (however divergent they may be among themselves) the mean result may be used to check the plans. Dugdale gives two. The same engraved sheet which contains Loggan's plan gives three. These results are here tabulated:—

	Nave.		Choir.
Dugdale—North	1,000	...	795
Dugdale—South	1,000	...	785
Loggan—North	1,000	...	752
Loggan—South	1,000	...	917
And to a smaller scale on the same sheet—South	1,000	...	890
Mean...	1,000	...	828

My object in this investigation is to establish the probability of the Oxford plan No. 1 being trustworthy; and the evidence of the perspective views is, as far as it goes, in favour of this probability, in reducing the ratio of the length of the nave to that of the choir. Another argument in its favour is drawn from the fact that the extent of our churchyard to the east is exactly the difference of length shown between the old and new cathedral on the plan. And in the account of Sir Christopher Wren's works in the "Parentalia," it is stated that the commissioners for rebuilding the City had settled and had obtained Parliamentary sanction for the width of all the streets before anything had been fully determined about the design for the new fabric. It seems, therefore, extremely probable that the street defines most accurately the extent of the old cathedral, and that this is again in favour of the Oxford plan No. 1.

The *primâ facie* points which make against it are,—first, that it does not fit our new discoveries; secondly, that the internal detail is drawn in an obviously careless manner, the pillars of the central tower alone seeming to have been properly laid down, and the rest merely sketched in hap-hazard; and, lastly, the curiously oblique lines of the fronts and ends, &c., which I have already noticed.* I think, however, that I shall be able to show that the last-mentioned *primâ facie* doubtful point (that of the oblique ends) is really an evidence of the accuracy of the plan; that the second is nothing more than inattention to a detail which had nothing to do with the gist of the drawing, and that the first-named misfit has arisen from the fact that the draughtsman was put out by an irregularity of which he had no previous experience, namely, a deflection of the axis of the choir from that of the nave. This appears to be the solution of the whole difficulty, and when the drawing is corrected for this peculiar arrangement, everything fits in its place, and the oblique lines are all of them reduced to their proper square directions. And now the plan becomes intelligible. But I have additional evidence, and will here quote a passage from the "Parentalia," which is very much to the point:—

"The reasons for changing the site of the church, and taking up all the old foundations are chiefly these:—First, the Act of Parliament for rebuilding the City had enacted that all the high streets (of which that which leads round the south side of St. Paul's was one) should be 40 ft. broad, but the old foundations straightened the street towards the east end to under 30 ft.

Secondly, the churchyard on the north side was wide, and afforded room that way to give the new fabric a more free and graceful aspect.

Thirdly, to have built on the old foundations must have confined the surveyor too much to the old plan and form; the ruinous walls in no part were to be trusted again, nor would the old and new work unite or stand together without cracks.

It being found expedient therefore to change the foundations, he took the advantage of more room northward, and laid the middle line of the new work more declining to the north-east than it was before, which was not due east and west, neither did the old front of the cathedral lie direct from Ludgate, as it does not at present, which was not practicable without purchasing and taking down a great number of houses and the aid of Parliament. This, though much wished for, he was not able to effect. The Commissioners for rebuilding the City had in the first place marked and staked out all the streets, and the Parliament confirmed their report, before anything had been fully determined about the design for the new fabric. The proprietors of the ground, with much eagerness and haste, had begun to build; accordingly, an incredible progress had been made in a very short time, many fair and large houses erected, and every

* A reduced copy of this plan is published in Mr. Longman's work, "The Three Cathedrals."

* The oblique line of the west front is also shown in Loggan's plan.

foot of ground in that trading and populous part of the town was highly estimated."

It is here then stated, upon the authority of Sir Christopher Wren, that the axis of the new cathedral was set more declining to the north-east than it was before. But how if the cloister wall shows that the nave declined to the south-east instead of the north-east? Sir Christopher Wren, an astronomer, was not a man to be mistaken in a matter of east and west, but he may have put down to irregularity, which he more than once mentions in connexion with the choir, the deflection of its axis, and with it the north-easterly tendency of the whole cathedral. These bearings are as follow:—

The new cathedral to the north-east	6°	28′	
The cloister wall and chapter-house	0°	59′	to the south-east.
But the general axis of the cathedral to the north-east	3°	15′	

That is, on the assumption that the Oxford plan No. 1 correctly shows the correlation of the old and new fabric at the east end. That this was correctly marked on the plan, both at the east and west, I have scarcely any doubt; but as the whole of the foundations of the choir must have been removed, our only chance of proof from the spade will be in the possible discovery of the foundations of Paul's Cross, of which I by no means despair. But there is nothing unreasonable in the idea of a deflection of the axis. In the case we are contemplating, it must have been certainly large,—not much less than 4°. There is, however, in a fine abbey church,—Whitby,—an instance very much more considerable.

To tabulate such cases as are known to me,—

Whitby	6°	2′
Old St. Paul's, hypothesis	3°	55′
Lichfield	1°	45′

St. Mary's, Oxford, has it to a very considerable degree, 3′ 20″. The above all incline to the north, which is the general direction; but there are instances of deflection to the south. Other cathedrals may be cited for a smaller amount from my own observation; I may name York, Norwich, Peterborough, and Lincoln, as designed by Bishop Remigius, but afterwards the axis was straightened by Grostete; also to a small but very perceptible extent, St. Peter's at Rome.

If we assume the nave to have been square with the west front, and that its central line was correctly shown on the plan, and then set it out on this hypothesis, not only do the cloister and chapter-house agree very nearly indeed with their real places, but the south wall of St. Gregory's Church falls centrally upon a piece of foundation, which was discovered in the alterations made about six years ago at the west end, viz., a strong Portland stone foundation, which probably belonged to some classical addition by Inigo Jones, where a central entrance-door is shown on some of the drawings. The strongest argument, however, is to come. On the hypothesis that the position of the nave must be so corrected, I ventured a few days ago to ask for and obtained leave to dig in the north churchyard for the traces of the north transept wall, and found them in the very first pit, within 2 ft. of the centre of the hole. The whole of the work west of the tower is thus shown to be in accordance with the plan, after correction in the manner above explained, and the axis of the transept agrees in direction with the plan, and all this comes by moving it on the western extremity of the axis as a pivot. I think, then, we must conclude that the eastern extremity had the same relation to the present cathedral that the plan shows, and this implies the deflection of the axis of the choir. The deflection we are supposing could not have been contrived without much inequality in some of the choir arches; some must have been spread out and others contracted. On this point we have Sir Christopher Wren's evidence, taken from the "Parentalia," p. 274, "Lastly the intercolumniations or spaces between the Pillars of the Quire next adjoining to the Tower are very unequal." This is exactly what must have occurred with a deflected axis.

The Oxford plan No. 1 shows the axial lines as coincident at the extremity of the old choir. This would seem a very probable arrangement. But in stating this, we must not overlook the words of the "Parentalia," quoted above, that Sir Christopher Wren took advantage of more room northward, &c. The Oxford plan, however, as it stands, shows a larger area of the new cathedral to the south of the old; whereas the amended plan gives the preponderance, although only a small one, to the north side. I claim, however, that the first purpose and end of that plan is that it was intended to show the axial deviations of the two cathedrals, and that it placed them at the east and west extremities correctly, whatever it did elsewhere; and if so, there must have been the deflection of axis which I have spoken of. It is to be observed further that the plan as drawn shows the eastern wall very oblique to the axis of the cathedral, and the correction of the axis in the way proposed brings it very nearly square. Thus the only way to reconcile this plan with the new discoveries, if we retain the eastern points of coincidence, is by a deflection; and if there was no deflection, a plan which after a simple readjustment has proved itself accurate at the north transept, must be entirely discredited as to its representation of the east end.

The arguments against the deflection are the silence of Sir Christopher Wren on the point, and that straight axes are shown on this and in the other two plans, viz., Hollar's and Loggan's (for the Oxford plan No. 2 lacks authenticity), and the words of the "Parentalia" that "The surveyor took advantage of more room northward," may be quoted in this sense; but this last point is neutralised by the consideration that the same passage speaks of the axis of old St. Paul's as declining north of east, which could not have been true of an undeflected axis, for it has been demonstrated that the axis of the nave did not decline to the north-east at all. Besides, the orientation would then have been so nearly true that he would scarcely have said it was not so without some qualification. The confirmation I hope for may perhaps come from the foundations of Paul's Cross. This interesting structure is shown on the Oxford plan No. 2 and the place is confirmed by several old perspective views.

It is true that the plan we are now considering gives an impossible extension to the choir, but the compiler was probably influenced by Stow's figure of 690; but I think his place for Paul's Cross about opposite the buttress dividing the second and third bay of the choir, and his distance from the cathedral itself, may be allowed to have much weight, especially as he has rendered the due proportions of the chapter-house to the cloister, which neither Hollar's plan nor the Oxford plan No. 1 has properly represented.

The Proposed Alterations in the Churchyard.

There is an agreement between the City of London and the Dean and Chapter of St. Paul's which I trust will be favourable for the examination of the part of the churchyard in question, as there appear to be no graves in the immediate neighbourhood of the most probable site. In carrying out these arrangements, care will be taken, by the express stipulation of the Dean and Chapter, and the no less cordial desire of the City Architect, to preserve the old remains which have been discovered, and to allow them to be well seen.

The New Peal of Bells.

I have on my programme a few remarks to make on the bells which have lately been added to the cathedral and hung in the north tower. This tower, although in the general view of the cathedral it does not seem a large object, now contains all on one level twelve bells, which Sir Edmund Beckett considers the heaviest peal that can be rung. The tenor is 62 cwt., and the total peal weighs about 272 cwt. The original floor, which seems to have been calculated for a much lighter peal, had in consequence to be strengthened. This has been done by powerful struts, two from each face of the tower, meeting in a quadrate collar arrangement, which strengthens the whole floor. The timbers are large, generally 18 in. deep, and some as much as 16 in. broad, either oak or of teak. The frame also is very solid. The effect produced by the swinging of the enormous mass of metal composing the peal is almost *nil*. I have, whilst the ringing was going on, placed my hand between the timbers of the frame and the stonework of the tower, and have felt nothing more than the slightest possible palpitating movement, very similar to that of my pulse, and scarcely more perceptible. The bells were cast and hung by Messrs. Taylor, of Loughborough, and are the gift of the Corporation and some of the leading companies of the city of London.

The Decoration Scheme.

The position of the scheme for the embellishment of St. Paul's is this. A sub-committee have recommended the adoption of a design left by Mr. Alfred Stevens for the pictorial treatment of the dome in mosaic. The President of the Royal Academy and Mr. Poynter have agreed to assist the Dean and Chapter and the committee in carrying out this design, with such modifications as the proper selection of the subject entails, and they are now considering the proper means of carrying out the proposal, which is to begin by a full-sized cartoon placed up in the dome itself, so that the scale of the work may be thoroughly settled and adjusted to its proper situation. This work, both preliminary and final, will necessarily take a considerable time.

In connexion with the embellishment of the dome, it may interest the members to consider a very curious evidence of thought by the skilful and scientific designer of the cathedral, which I found out when making the careful measurements of the configuration of the cupola which was requisite for this undertaking. These measurements for the section were taken with the help of the theodolite, and in several ways, so as to check, or I may rather say confirm, one another, so that I have no doubt of their accuracy within some fraction of an inch. Having got the measurements, I was soon able to make out a system of three centres, with radii of about 67 ft., 46 ft., and 60 ft. 6 in., which afforded an exceedingly close approximation to the figure. But I spent a great deal of time in endeavouring to make out a law of design combining these centres and radii. At last it struck me that the arc of a parabola which should be tangent to the sloping side of the drum at the springing, and of which the central line or axis of symmetry was inclined to the horizon at an angle of 51° 30′, might afford a probable solution. These data, combined with the springing and culminating points of the dome, enabled the elements, as they are called, of the curve to be calculated, and when done, although it differed a very little from the contour of the dome as executed, it explained the position of the centres and radii which I had been seeking,—absolutely. The correspondences are here exhibited:—

	Ft.	A difference in horizontal measure of Ft.
After adjusting the measured and the calculated dimensions at the bottom and the top, that is at the springing point and the circular eye of the dome, we have for these equivalent heights, at	40·30	·03
" " " "	13·40	·00
" " " "	37·65	·06
And at the height of about 55·00 ft., where the horizontal measures have been equated, a difference in vertical measure of		·06

A FEW SUGGESTIONS RESPECTING THE ESTABLISHMENT OF A NATIONAL THEATRE IN ENGLAND.

THE overflowing audiences which, we are happy to hear, are nightly and enthusiastically testifying the interest taken by the playgoing public in the laudable exertions of Mr. Henry Irving, at the Lyceum Theatre, to do justice to the genius of Shakspeare, triumphantly contradicts the sweeping assertions of the opponents of the movement in favour of an English Theatre expressly devoted to the highest objects of the Drama (1), that the masterpieces of our great dramatists are no longer attractive, and (2) that the representation of them may be confidently entrusted to the spirit of personal enterprise. Various minor objections to the proposal were urged by writers who consider their own interests may be more or less unfavourably affected by such an establishment; but the gravamen of the opposition is based upon the above two arguments. It is amusing to observe the ingenuity exercised by some who have rashly committed themselves by their insistence of the first or their support of the second opinion to extricate themselves from the portion in which the "inexorable logic of facts" has placed them, and reconcile the two by carefully avoiding every allusion to the inferences which would naturally be drawn from the event by those who differ with them on the question at issue. In these days, we are told, the public requires only to be amused at the least expense of merited labour. Hence the attractions of broad burlesque, opera bouffe, grand spectacle, farcical comedy,—any entertainment, in short, which makes no demand upon their continued attention. In positive disproof of this assertion, we find the Lyceum thronged every evening from pit to

ceiling by an audience sitting in rapt attention, broken only by bursts of approbation, for four hours during the performance of "Hamlet," one of the longest and most philosophical plays in the English language. A tragedy unrelieved, throughout the five acts, by anything, except the grim humour of the short scene of the grave-diggers. At Christmas-time, too, when every theatre in London has taxed its capabilities to vie with its competitors in providing the greatest amount of attraction for the holyday makers. How long this success may last is, of course, uncertain; and on its continuance depends the extent to which Mr. Irving may be rewarded for his exertions in a noble cause; but had not the public responded to his call, the consequence must have been disastrous. What becomes, then, of the second argument? Do not these considerations prove the desirability of a national theatre, the existence of which could not be endangered by accidental circumstances; at the same time that no personal interest, no pecuniary motive, would necessitate the nightly repetition of the same play as long as it drew great houses, to the exclusion of other dramas and the injury of the principal performers, of whom it exhausts the power and destroys the spontaneity, reducing them to mere machines, dragging themselves wearily through parts the very words of which occasionally escape their memory, as we have heard confessed by more than one actor who has been subjected to that painful ordeal.

Such, however, must be the natural result of that "personal enterprise" to which some of the dissentients would confidently entrust the preservation of the matchless drama of this country, the respectability of the stage, and the culture of histrionic art, objects which can only be achieved by the solid foundation of an establishment independent of the caprice of fortune or the predominant taste of the public.

Mr. Henry J. Byron, one of the half-dozen successful dramatists who at present enjoy the command of the theatrical market, and whom we regret to find on "The other side of the Question," in an article under that title, in the second number of the *Theatre* (new series), has roundly declared his conviction that "Such an institution as a National Theatre would inevitably collapse amidst heartburnings, jealousies, conflicts of opinion, and general chaos." He has been rather too hasty in his conclusions. In "such an institution" as we desire no collapse could possibly take place from such causes, or from any "ills that [professional] flesh is heir to." He has argued without his premises. It will be time enough for him to deliver his judgment *ex cathedrâ* when he really knows how it is proposed the project should be carried out. We quite agree with him that "common sense generally asserts itself in the long run, and results prove the strongest arguments." It is in the cause of common sense that we plead, and we have therefore no doubt that the results would justify our advocacy.

It is noteworthy that the persons who principally profess to deny the necessity, doubt the expediency, and predict the failure of a National Art Theatre, are the "commercial managers," as Mr. Boucicault happily termed them, and the prolific and popular purveyors of those farcical comedies and brilliantly-mounted absurdities which occasionally replenish the empty treasury of the speculator, and amply compensate the author for his light-hearted and easily-executed labour. Surely they have nothing to fear from the success of a theatre established to satisfy the demands of an entirely different class of playgoers? Amongst the millions resident in the metropolis, to say nothing of the numbers whom the facilities of railway travelling add nightly to the mass, the mere amusement-seekers will always constitute an enormous majority. As regards the actors, we have not heard of a single dissentient. Mr. Irving is practically proclaiming his faith in the existence of remunerative audiences for the highest order of intellectual compositions. Mr. Hermann Vezin, in his recent letter to Mr. Godwin, unequivocally declares that such a theatre as we propose to establish has "always been his most earnest desire," and concludes by stating his belief that, looking upon it in simply a pecuniary light, "it would make more money than any of those managed on existing principles."

That it is "a consummation devoutly to be wished" by all who have the true interests of the stage sincerely at heart is the opinion of thousands besides the above two eminent artists and ourselves.

DOMESDAY LITERATURE.

MR. EYTON'S contribution to the literature of Domesday* is an excellent work looked at from a statistical, rather than a profoundly literary point of view. It is strange how little interest the great survey of our island kingdom has created in the world of letters since its publication by the Government in 1783. Of all who have written about it, Sir Henry Ellis and Kelham are probably the best known for their labours upon the general work. The photozincographic edition published by the late Sir Henry James is simply a miserable production, the faulty places of the fac-similes being botched up and retouched by hand to such an extent that their value for palæographical purposes is absolutly *nil*, their usefulness to correct typographical errors in the magnificent folio edition of the commissioners very doubtful, if indeed they are not likely to make difficulties where none exist. Mr. Eyton has prepared in this work a large number of elaborate tables on a great variety of subjects, such as, for example, the farming stock, the population, the valuation, the boroughs, the landholders, the *terra Regis*, the old crown demesne, various groups of demesne lands, the prædomesday hundreds of Dorset, the domesday hidage compared with modern acreage, the fiefs, and ploughlands; and he gives us a fairly full index of persons and places. But he omits to tell us anything about the sources from which he derives all this information. We do not observe a single word in his book about the manuscript or printed works which he has consulted; it is impossible, therefore, to tell whether his analysis is the result of a careful examination of the venerable codex itself, as exhibited in the copies yet remaining of it, or whether he has based his observations upon the Commissioners' edition or that of the photozincographers. From the fact recorded in the preface that a reprint of the Dorset Domesday has been published by the "Historians of Dorset" (? which ones), we are led to infer that his book is based upon this "faultless version." In our mind, if such an epithet is possible of application to any edition, it is alone well deserved by the folio edition of Sir Henry Ellis, of which we shall say more presently.

The "Domesday Book" consists of two small square folio volumes, comprising about 1,660 leaves, written in the year 1086. Other volumes of similar construction are the "Exeter Domesday Book" and "Ely Domesday Book," both written about the same date. The "Winchester Domesday Book" was compiled in 1148; and the "Boldon Book," containing the Domesday Returns for the Palatine County of Durham, in 1183. These five manuscripts compose what is collectively known as "Domesday." The first two, or Domesday properly so called, were printed in special type made for the book in 1768. The printing commenced in 1770, under the direction of Sir Henry Ellis, late Keeper of the Manuscripts and Principal Librarian of the British Museum. It was issued in 1783, after 38,000*l.* had been spent upon the edition. The type was unfortunately destroyed when Nichols' printing-office was burned in 1808. The last three of the five manuscripts referred to were published in 1816 in form of a continuation or appendix to the original work. Sir Henry Ellis's "Introduction to the Domesday Book" was published in two volumes octavo in 1833, and from that time to this no work has ever been issued to supersede it. As regards the method in which the original return was obtained,—a subject, by the way, upon which Mr. Eyton is silent,—it has been thought, and with strong reasons, that the three "king's clerks,"—Maurice, Bishop of London, William, Bishop of Norwich, and Robert, Bishop of Chester,—superintended the work. With regard to the details of the returns, and the method of procedure, the Anglo-Saxon Chronicle, under the narrative of events taking place in the year 1085, gives the following exact, but somewhat mournful, account of this great taxing of the kingdom:—"The king had a great council, and very deep speech with his witan about this land, how it was peopled, or by what men; then he sent his men over all England, into every shire, and caused them to ascertain how many hundred hides were in the shire, what land the king himself held, the cattle within the land, and what dues he ought to have in twelve months from the shire. Also, he caused to be written how much land his archbishops, his suffragan bishops, his abbots, and his earls held; and (although I may be somewhat prolix in my narrative) what or how much each man had who was a holder of land in England, in land or in cattle, and how much money it might be worth. So very narrowly he caused it to be traced out, that there was not one single hide, nor one yard of land, nor even (it is shame to tell, although it seemed to him no shame to do) an ox, nor a cow, nor a pig was left, that was not set down in his writ. And all the writings were brought to him afterwards."

Colonel Sir Henry James's photozincographic copy of the Domesday is a good example of the work performed by that process of reproduction. Its weak points are its sponginess, its failure to give tones or depths, its uncertainty, and, above all, its need of retouching by hand. It may be fervently desired by all lovers of this national relic that the Palæographical Society will some day undertake to reproduce the book by the autotype process; and this might be done without delay if only subscribers would come forward to defray the expenses of the work. Meanwhile the Commissioners' typography is the best to work upon. Several portions of this great record have been illuminated by different writers. A few years ago Mr. N. E. Hamilton edited for the Royal Society of Literature a draft,—up to that time unknown,—prepared for the Cambridgeshire and Ely inquisitors, from which the Cambridge Domesday had been condensed. This unknown record was curious in this respect, that it stated the numbers of cattle, pigs, and horses, and such like matters, in each estate, and so bore out the statement in the Anglo-Saxon Chronicle referred to above, whereas the text of the Domesday does not so record them. Mr. Eyton's introductory essay in the book before us adds considerably to our knowledge of Domesday manners and customs, and is all the more valuable because few have written on this subject so collectively as he has done. His tabulations may be relied on because they have been evidently prepared with great care and judicious selection; and we hope he will not confine his labours to Dorsetshire only. A Domesday Society, composed of Mr. Eyton and others who, like him, take a noble pleasure in those manuscripts and their teachings, would be an honour to the world of antiquarian literature, and fill up a great want which is only too often felt by those who have to examine these records by the light of their own, alas, frequently imperfect, knowledge of the subjects involved in the search.

* A Key to Domesday . . . specially exemplified by an Analysis and Digest of the Dorset Survey. By the Rev. R. W. Eyton, M.A. Taylor & Co., Little Queen-street. 1878.

GREEK ART.

MR. C. T. NEWTON, C.B., of the British Museum, resumed his lectures on Greek art on Saturday evening last, at the College for Men and Women, Queen-square, Bloomsbury, taking for his subject "The Pedimental Sculptures and Metopes of the Parthenon." The previous lectures have been reported in the *Builder*.

Mr. Newton said that, at the last lecture, which he delivered in November, he drew attention to the frieze of the Parthenon, and that evening he was going to refer to other sculptured representations in the Parthenon; that was to say, the pedimental sculptures and the metopes. They were, no doubt, aware of the sad story of the Parthenon; how it was converted into a Christian church some time after the fall of paganism, how it was partly destroyed in the process of conversion, how it afterwards became a Turkish mosque, how in 1674 the sculptures were drawn by an artist named Carry, how in 1684 it was besieged by the Phœnicians, and how the Parthenon was destroyed in the course of that siege. It had been stated that the pediments, in 1674, when drawn by Carry, were very different from the state they were in when seen by English travellers in the next century. These drawings of Carry had been reproduced in various works and engravings. With the view of making those present understand the sculpture and the composition of the pediments, he had brought with him drawings illustrative of his lecture; they were, in fact, the eastern and western pediments as drawn by Carry, with certain improvements. He would endeavour to explain to them all that they could really affirm in the way of interpretation on the subject of these pediments. He was sorry to say, notwithstanding the very

great learning and thought bestowed upon these problems, that which they could affirm positively, was very little. To begin with the eastern pediment, Pausanias, that indefatigable traveller who described the works of Greece, had told them something of the subject of these two pediments. He stated that the subject of the eastern pediment related to the birth of Athene. This birth of Athene was a curious myth. What it originally meant no one could say. The story of the goddess of Athens was this: that Zeus had a violent pain in his head and called in the God of Fire, Vulcan, or, as some people stated, Prometheus, to cleave his head open. When this was done the Goddess Athene, full-armed with a spear and helmet, sprang from his brain. This was the native myth. If they thought Zeus meant heaven, and that Athene was the idea of ether, then they might suppose that this had some reference to this ethereal matter which they generally associated with the idea with the part of the sky nearer them. But this was not the question into which he now proposed to enter. The place where this miraculous birth took place was Olympus, which was the Greek way of expressing heaven where the gods were supposed to dwell above this earth. If this scene took place in Olympus, the pediment must in some way represent Olympus, and they might be quite sure from what they knew of the chronology of ancient art that it would be represented,—as, in point of fact, it was represented,—by introducing into the pediment the sun and the moon. Helios, the Sun God, with his horses, was represented as coming out of the waves on one side of the pediment, and on the other there was the representation of the moon going down into the sea, thus marking the limits of the heavens. He thought there could be no doubt that four of the figures depicted stars fading away as the day came up out of the ocean. Then there was a figure representing the god Pan, which expressed the idea of the first rays gilding the mountain top, and the dawn of morn, Aurora, who was always represented as pursuing a youth who was supposed to represent darkness. Beyond these, there was the moon also riding away before the daylight. On the other side was the goddess of night, and one of the horses was represented as having done his course, and was about to sink into the waves. On the base of the throne of the statue of Zeus, at Olympia, on which the birth of Aphrodite was represented by Phidias, the scene was in like manner bounded at either end by the sun. Then the question arose, where was this birth represented? There could be no manner of doubt that it was depicted in the middle of the pediment which had been destroyed, the destroyers taking away the sanctity of the Temple, striking at the root of the worship by the destruction of the statue of the deity. This part was then irretrievably gone, and, as far as he knew, they had not one single vestige of the figures left which were placed in the centre. No doubt there would have been found Zeus, Athene, and Vulcan, or Prometheus. He had before him a picture of a vase, which was in the British Museum, upon which was represented Zeus giving birth to Athene. This vase was exceedingly interesting, as showing any one the manner in which archaic art represented this subject, but there could be no question that it would give them no idea how Phidias would represent it in pediment. If it was not depicted as in the vase, the goddess must have been standing by the side of Zeus. In that case, the birth would actually be taking place, and they might suppose, judging from the expressions of ancient poets, that the birth took place at daybreak, which would explain the position of the sun just rising above the horizon. Athene, like all the goddesses, had a birthday, and the exact day was marked in the Athenian calendar. On the morning of the festival, the ceremonies began at the moment it was supposed the birth of Athene took place. According to this vase, the goddess who presided over human births was represented. They knew she was present on the occasion, because her name was written over a figure on one of the vases. Of the four figures, two were in rapid motion, and the rest were seated very calmly, with that tranquillity which befitted gods enthroned in Olympus, or heroic personages. The first figure on the right side was originally called Hercules, then he got named Theseus, which name was still attached to him, but there was no sort of authority for it. Various other names were given him, because he reclined on the skin of a lion or a panther. In the Louvre there was a statue of this sort. It had been properly argued that one of the figures was that of Iris, the messenger of the gods, moving away, making the announcement of the birth to the world. In the British Museum they would find Zeus represented as seated on the top of a mountain, and one of the figures was shown to be running down the steep slopes of this mountain as if she were taking a message from Zeus to the people below. In the opposite half of the pediment there were three female figures which were unknown to them. Originally they were supposed to be the Three Fates, because they formed one group, but that idea had now, he thought, been given up, because it had been said that the Fates would not be present at the birth of a goddess. One of the figures was supposed to be that of Victory, and the photograph before them showed that a fragment of the figure had been found in the Elgin room by one of the workmen, and upon it being fixed it added greatly to its beauty. He was inclined to think that it belonged to the pediment. Many theories had been put forward in regard to the subject of this pediment, and they had led to the collecting of an enormous deal of learning, but he was bound to say that they had not settled anything in regard to this pediment. After reviewing the different attributions assigned to these figures by various archæologists, the lecturer alluded to the theory lately put forward by Professor Brunn, of Munich, who supposed the several groups and figures to represent different parts of Olympus. The Theseus he supposed to be the mountain Olympus just touched by the rays of the rising sun, the two next figures the hours guarding the entrance to heaven. In the three figures in the opposite half of the pediment he recognised the stars which brought clouds and rain. With regard to the western pediment, of which now few fragments remain, they were very nearly as perfect as when they were drawn by Carry. In 1794 Mr. Dalton travelled in Greece, and he published a very rare book containing views of Greece. The work excited little attention at the time, but it was remarkable as showing the condition of the pediment. Previously to Dalton visiting Greece, a chronicler of the time told them that a person was struck with the beauty of the Greek horse, and in trying to lower the sculpture, it broke and fell to pieces; which was clearly shown according to the drawing of Dalton. In the centre were the figures of Athene and Poseidon, represented in the moment of contest for the territory of Attica. The lecturer exhibited the same scene on a painting on a Greek vase, from which it seemed probable that the olive-tree, produced by Athene from the soil of the Acropolis, was originaliy in the centre of the pediment. The scene was marked by blessing the two rivers of Attica, the Ilissus and Cephissus, in the angle of the pediment. Behind Athene was her car drawn by Victory, and between this car and the reclining river-god in the angle were a number of figures, generally thought to be Attic deities more or less connected with Athene. In like manner, behind Poseidon were a number of figures, which had been usually identified with marine deities, such as they might expect to find as attendants on a supporter of Poseidon. Professor Brunn, however, supposes that these subordinate figures on both sides of the pediment were figurative representations of the various natural features on the sea-coast and land frontier of Attica, which was a very startling idea. It was quite true that some of the paintings of ancient authors did show the personifications of rivers and mountains, and in ancient compositions this idea was carried very far. There were, however, no means of identifying the several promontories in connexion with these figures. He was sorry to say that after mature study this was all he could state as to the interpretation of these two pediments. He wished it were more, and possibly the discovery of other monuments might some day give them more information than they at present possessed. They must wait patiently. In the meantime, if they knew the whole scheme of these two compositions, and could identify the figures, their pleasure would be much greater in the contemplation of the works of Phidias. They must remember, however, that their ignorance from this respect did not prevent them from having the great and lasting pleasure of studying these works. All these figures were matchless in ancient sculpture; they had long been admitted to be the finest, both in the representation and in the form of drapery. To descant upon any of them would require a separate lecture. They certainly could not study them too much. They might be best appreciated when casts of the sculptures were brought to this country, and placed side by side with the figures. In regard to the metopes of the Parthenon, they had in marble sixteen. Originally all round this temple were ninety-two, and he was sorry to say of all that number very few remained. Lord Elgin had been abused for taking away these sixteen, and nobody had abused him more than the French nation. His contemporary at the time, the French Ambassador, only took away one, and had the kindness to say in his work that he would have taken away the rest, but Lord Elgin anticipated him. Lord Elgin left behind nineteen metopes, and at the time Stewart visited Athens the metopes on the west and the north sides were still preserved, but now, by exposure to the weather, decay had been so complete that, except in very few instances, no subject could be made out at all. The subjects on the north side were thought to be scenes from the taking of Troy, and also from the scenes of the battle with the Centaurs; while at the east end, which was no doubt the most important end of the Tempie, there was what was supposed to represent the battle of the gods and the giants, which would have distinct reference to the exploits of Athene herself. The subject at the west end would have a more immediate reference to the Athenian people, there having been a distinctly recognised battle; while on the south side there were represented subjects which had not yet been interpreted. If they examined the sixteen metopes at the British Museum, they would find that the subjects of them were divided into groups; upon each metope was represented the figure of a Centaur, some of them being highly dramatic in their treatment. In conclusion, Mr. Newton referred to the necessity and importance of establishing a museum of antique casts where might be gathered a number of casts of the figures which had been scattered all over Europe. There were many in the British Museum, but there was always a hope of having more. There was always the hope that stray bits of marble, forming part of the limbs of figures, might be found. The Venetians might have taken away to Venice some of those portions which had not yet been discovered. The only presumption for this was that the head of one of the figures of the sculpture of the Parthenon was traced to a house at Venice. In the Museum of Venice there was a seated figure, of which they should have a cast. His next lecture would be on the great work of Phidias in the Parthenon, "The Chryselephantine Statue of Athene, and of Zeus at Olympia." Unfortunately, as these works were made in gold and ivory, no vestige of them remained. They must imagine what they were from the description given by ancient authors.

THE TEMPLE OF HEROD.

It is high time this wearisome discussion regarding the Temple at Jerusalem was brought to a close, as from the absurd manner in which it has been conducted by Lieut. Conder, if it were continued till doomsday, it would not be nearer a conclusion than it now is.

On the 2nd of December he brought forward six well-defined objections to my plan of the Temple, and when these were answered by me, he neither disputed my criticisms nor reaffirmed his own statements. He simply dropped them, and, shifting his ground, brought forward on the 17th a dozen new points; and when these were categorically answered, they too are dropped, and in his letter in your last issue new ground again is taken up, and the old ones are left to take care of themselves. It was the same in the controversy he provoked in your columns in July last, when he asserted the arches of the Dome of the Rock were pointed. When it was shown this was not the case, he made no admission that he was mistaken, but simply dropped it, and we hear no more of pointed arches in the controversy. If his present objections are answered, which, if space permitted, it would be the easiest thing in the world to do, there are, no doubt, dozens of other objections which, if this system is continued, could be as easily brought forward, and as lightly dropped, with-

out advancing our true knowledge of the subject in the slightest possible degree.

In his present letter, Lieut. Conder characteristically reverts to his imaginary underground contours, which are a very safe subject to theorise upon, inasmuch as without excavations, which will not be permitted, in the Haram area, neither he nor I, nor any one else knows or can know, anything certain about them; and if we did, no argument of the smallest value could be founded on such knowledge. Even if we assume that his "rock levels" are exactly as Lieut. Conder represents them, all that can be said is, that Solomon showed less than his usual wisdom in selecting a site for his Temple which would involve the construction of a few more cubic yards of masonry in its foundations than in another situation, where, if he had had the advantage of Lieut. Conder's advice, he might have saved this extra expense. But what reason have we for supposing that Solomon was actuated by any such motives? He certainly did not exhibit any such spirit of economy when he carried up the south-east angle of the Haram, from a depth of 80 ft. below the present level of the ground as a foundation for his palace. Nor, for the matter of that, did Herod, when he raised the terrace walls of his Temple courts, from a greater depth than Solomon could, from Lieut. Conder's own showing, ever have done. There is absolutely nowhere, that I know of, any hint that Solomon was guided by such motives in the selection of a site for his Temple. Nor does any description of the extent or depth of its foundation exist anywhere which would justify the theory Lieut. Conder bases on them. We have indeed nothing except Josephus's rhetorical description of them (Ant. xv. 11. 3), which would lead to the very opposite conclusion of their being constructed with the most boundless extravagance.

Under these circumstances, it appears to me as strange an hallucination as ever entered the brain of any reasonable person, to throw overboard all that is said in the Bible, and by Josephus, who are the only trustworthy authorities, and to neglect what is shown in the Ordnance survey, in order to construct a theory of the Temple based only on the idea that Solomon, in selecting the site and arranging its courts, was guided only by considerations of economy in saving masonry in its foundations. For this is practically what Lieut. Conder's theory comes to, and is all he has attempted to urge in its favour, but which I, for one, distinctly decline to accept as a true explanation of the mystery.

There are two other points in Lieut. Conder's letter, which, as I have begun, I fear I must allude to. The first is as to the knowledge the Mediæval historians possessed as to the true site and form of the Temple. To exemplify this he quotes half a dozen authorities that he thinks confirm his view, but he does not allude to chapter xii. of the second part of my "Temples of the Jews," where they are shown to be more numerous, and are quoted at greater length. He does not dare to deny the correctness or the relevance of my quotations, though they lead to a diametrically opposite conclusion; he simply ignores them, as is his custom. The second is, with reference to the court of the *women*, and its relative importance to that of the *men* of Israel. Here again, he entirely ignores all I have written on the subject (pp. 95 to 120 of my "Temples of the Jews"), and writes as if I have never thought of the subject or consulted the authorities he names. On the contrary, I have both thought and read much, and believe my solution of the difficulty, as it is the first, is the most satisfactory solution of the difficulty yet attempted, and recommend it to my readers as the best answer to Lieut. Conder's criticisms. It is needless, however, to pursue these subjects further in this place, as the truth of the matter is, that nothing can be more manifestly absurd than Lieut. Conder's attempt to confine the whole argument within the four corners of this discussion. What I have said in it, he persists in considering as all I have to say, and what I have not said in it he treats as non-existent. In no instance does he refer to my published works on the subject, and, in fact, ignores them altogether. It seems to me strange that any one should follow such a line of argument with the manifest danger staring him in the face, that some one may, some day, read my books, and whenever any one does he must find out how grossly my views have been misrepresented in this wretched discussion. So far from viewing what has been said in it as all that is to be said, I repudiate it entirely as an exposition of my views. It practically does not contain a twentieth, or, taking the drawings into account, one-hundreth part of what I have to say, or have said, on the subject in my published works, and by these, as I said before, I am prepared to stand or fall. Though this discussion, from the mode in which it has been conducted, has not touched the marrow of the question, it may be considered satisfactory, in so far as I am concerned, inasmuch as I feel that if a second edition of my "Temple of the Jews" were called for I would not have to alter one line of the text, or one cubit in the dimensions of the plans, in consequence of anything that has occurred in the course of it. If Lieut. Conder were a more logical reasoner this, no doubt, would be a gain; but I am afraid that, though it may be easy enough to prove him to be in the wrong, that can hardly be considered by outsiders as indicating what is right.

This being so, I must beg leave to decline wasting any further time on a discussion which, from the mode in which it has been conducted, cannot possibly lead to any satisfactory conclusion. If, after what has passed, any one thinks he sees on what data Lieut. Conder's theory of the Temple is based, and prefers his plan to mine, all I can say is, that he is welcome, in so far as I am concerned, and I shall make no further attempt to disturb his faith. Our views of the conditions of the problem are too far apart for any *rapprochement* to be possible, and it would consequently be idle to attempt it. At the same time, it appears to me that Lieut. Conder's mode of arguing the question is, to use the mildest possible terms, so unfair and so misleading, that I shall consider myself perfectly justified in declining, unless I see fit, to notice anything that he may hereafter write on the subject.

JAS. FERGUSSON.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT the fifth ordinary meeting of this Institute, for Session 1878-79, Mr. Charles Barry, president, in the chair,

Mr. Aug. Laver, of San Francisco, was present, and was elected by acclamation an Honorary and Corresponding Member,—the President observing that Mr. Laver had been for several years past a Fellow of the Institute, and expressing the hope that his election as Honorary and Corresponding Member would be mutually advantageous to the members of the profession on both sides of the Atlantic.

The following gentlemen were then balloted for and declared to be duly elected, viz.:—

As Fellows.—Mr. H. D. Davis, London; and Mr. H. Walker, Leeds.

As Associates.—Mr. Charles Grieve, Mr. W. H. Wood, Mr. C. W. Brooks, and Mr. A. H. Tiltman, all of London; and Mr. R. Curwen, jun., Liverpool.

As Honorary Associates:—Mr. R. F. Grantham, C.E.; Mr. Henry Bessemer, C.E.; and Mr. W. R. Wood.

The donations to the Library included a new work by M. Le Sueur, entitled "Histoire et Théorie d'Architecture." Mr. Penrose said that Professor Donaldson, through whom the volume had been presented, had requested him to make a few remarks on it. The book appeared to be one of very great value and interest, but M. Le Sueur had thought fit to entirely doubt the reality, or at any rate the premeditation, of the curvature in the horizontal lines of the Greek temples. He had, on what basis Mr. Penrose knew not, come to the conclusion that the curvature of those lines was due entirely to the subsidence of the foundations. He (Mr. Penrose) thought he could easily show such a conclusion to be incorrect. To take the case of the Parthenon, the northern and eastern fronts were founded directly upon the rock, so that there could be no subsidence, and yet the curvature was the same on those fronts as on the southern and western fronts, which had some amount of artificial foundation. Moreover, Mr. Penrose said he had examined the joints, and they had not "given," as would be case were the curvature due to subsidence. He had also carefully examined and accurately measured the sixteen angle columns of the Parthenon, and he had found a difference of fully three-eighths of an inch in height between the inner and outer sides of those nearest the angles, this variation being clearly intended to enable the columns to accommodate themselves to the curvature of the horizontal lines in the several fronts. Besides, the centre columns were 2 in. longer than the angle columns. However, the work was an extremely valuable one, and he had been very much struck with the author's comparison between Egyptian and Tuscan architecture.

Thanks were accorded to the several donors.

Death of M. Duc.—The President said: Two years ago, a very distinguished French architect received the Gold Medal of this Institute at my hands. I allude to M. Duc, architect for so many years to the Palais de Justice, Paris. He has now, I regret to say, been taken away from us, after an illness of two months. His career as an architect has been that of an artist throughout. Early in his life he became a student of architecture at the École de Beaux Arts, and passed through his studies there and elsewhere with very great *éclat*. Some few years ago the Emperor of the French offered a prize of 100,000 francs to the architect who should be deemed by his colleagues and compeers best worthy of the prize. The choice fell upon M. Duc, and greater testimony to his talents, and to the cordiality with which they were appreciated by his *confrères*, could hardly be given. But he took only a part of the prize to his own use, and devoted a large sum to promoting the study of architecture,—in founding prizes, and in other ways encouraging the art to which he devoted his life. His and our old friend Professor Donaldson has undertaken to put together some interesting reminiscences of M. Duc's career, which, perhaps in the form of a sessional paper, will be laid before the members. In the meanwhile, the Council had sent a letter of condolence to his widow, lamenting, as all his French colleagues had done, the great loss which our art has sustained.*

The Honorary Secretaryship.—The President also announced that Mr. T. H. Wyatt had kindly consented, at the request of the Council, to occupy the post of honorary secretary, in the place of Mr. Cockerell, until the next election, on the clear understanding that it was a temporary service only, and that it should in no way prejudice the choice of the members when the next election of officers came on.

There was little or no discussion on Mr. Verity's paper on "The Modern Restaurant" (see *Builder*, p. 72, *ante*), the only speaker being Mr. Toulon, who said that as one of a party of members of the Institute who had recently visited the Criterion, he had been much struck with its economy of space, and with the excellence of the ventilation.

The President made a few remarks, in the course of which he referred to the successful manner in which Mr. Verity had surmounted the various difficulties encountered in the course of carrying out the building referred to.

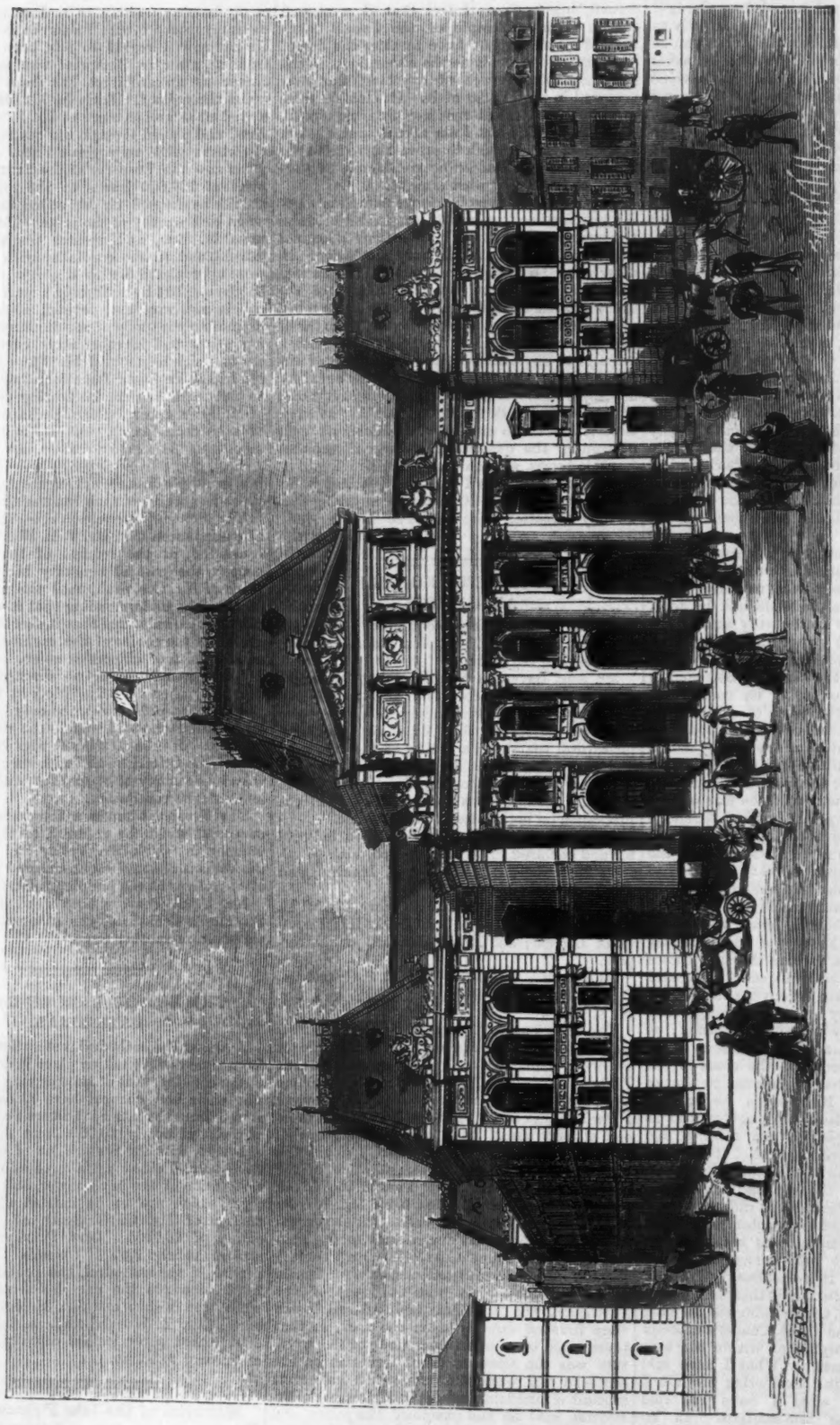
Mr. F. C. Penrose then read a paper on St. Paul's Cathedral, the substance of which we print on another page.

THE RESTORATION OF BANGOR CATHEDRAL.

AMONGST the cathedral restorations which are from time to time taking place in different parts of the country, that of Bangor may be included. The choir and chancel have already been restored from the late Sir Gilbert Scott's designs, at a cost of nearly 20,000*l.*, and the committee entrusted with the restoration of the cathedral have now decided upon proceeding with the restoration of the nave, tower, and other buildings, which are to be carried out from the designs of Mr. G. G. Scott, at an estimated outlay of 10,700*l.* Lord Penrhyn, who subscribed nearly 7,000*l.* towards the restored portion of the cathedral, has promised another 2,000*l.* towards the completion of the work, whilst the Bishop and Mr. Hesketh give 500*l.* each; Mr. T. Warner 420*l.*, and Mr. Nanney 200*l.*, other subscriptions already contributed amounting to 4,500*l.*

Memorial of the late Princess Alice.—It is proposed to raise a memorial fund (towards which contributions are solicited) to perpetuate the memory of the late Princess Alice, and which will be applied to the "Alice Hospital" in Darmstadt. To this hospital is attached a training-school for nurses.

* Some particulars of M. Duc's career will be found in vol. xxxiv., p. 181, and in last year's volume of the *Builder*, together with a view of the *Palais de Justice* (pp. 243, 245).



THE NEW BOURSE, HAVRE, FRANCE.—M. Lemaître, Architect.

SWEDISH BUILDINGS: PORCH OF TORSTENSONSKA HOUSE.

SWEDISH ARCHITECTURE.

THE accompanying engraving represents the Porch of Torstensonska House, now the residence of the Governors of the Province of Gothenburg, Sweden.

THE NEW BOURSE, HAVRE, FRANCE.

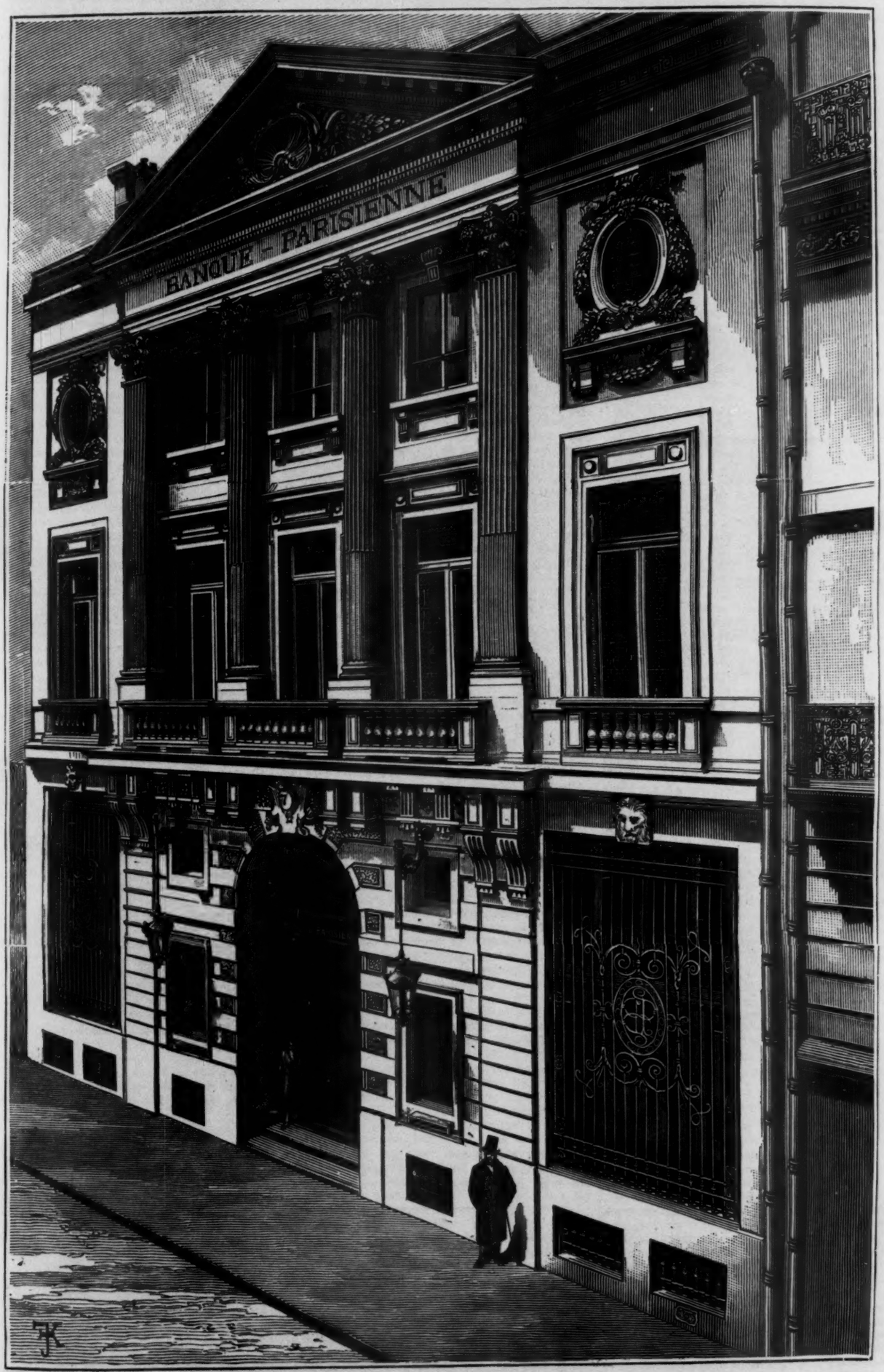
THE first stone of the new Bourse for Havre was laid on the 2nd of March, 1878. When it is completed it will take the shape shown by our engraving. It is placed in the centre of the town, and occupies an area of 4,000 mètres superficial. M. Lemaître is the architect, and the cost is estimated at about 90,000*l*. The Exchange proper, which has a gallery, presents an area of 200 mètres superficial.

In addition, the building includes meeting-places for the Chamber of Commerce, the Maritime Insurance Company, auction-rooms, reading-room, and many other apartments.

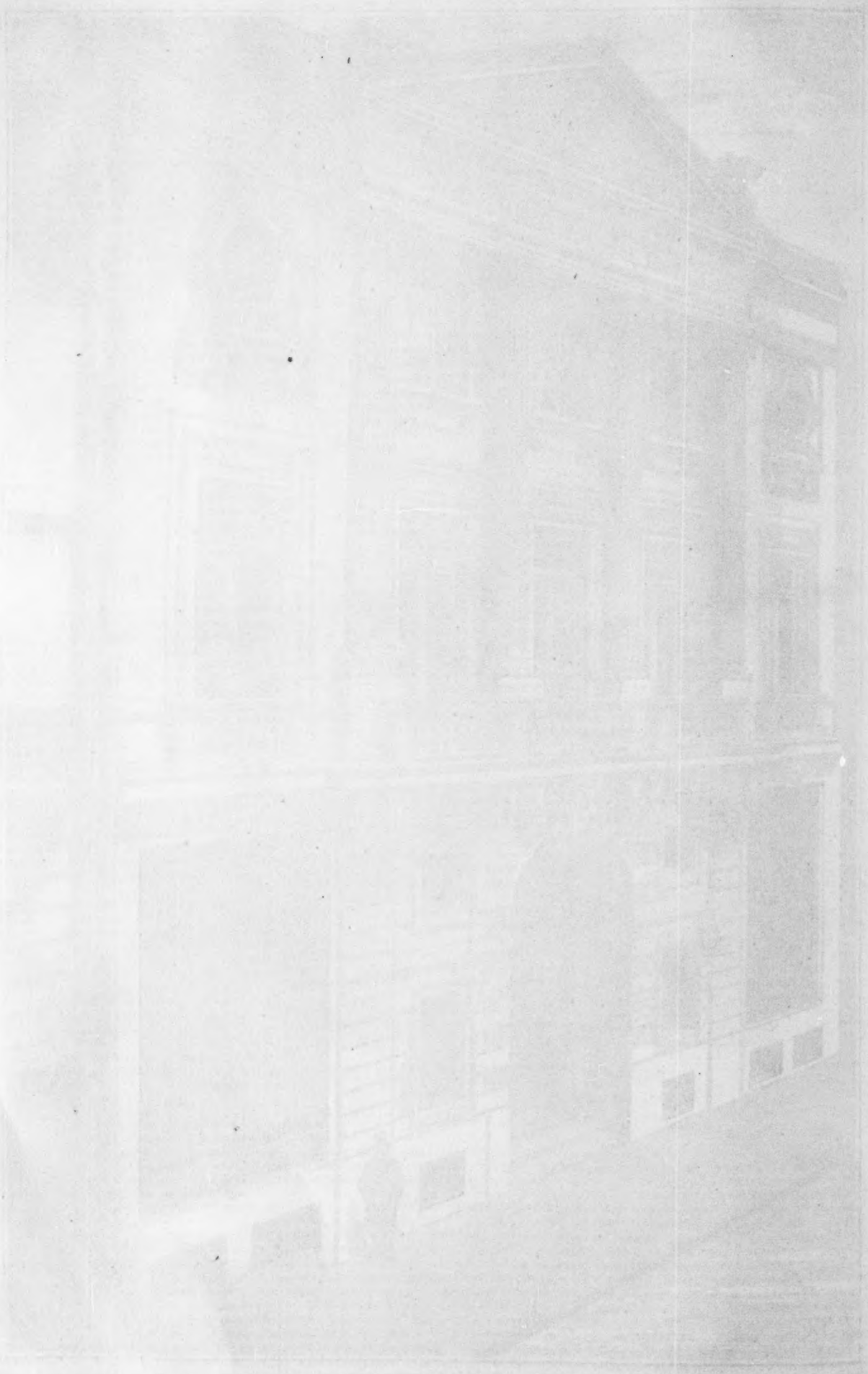
THE PARISIAN BANK, PARIS.

THE Parisian Bank, founded in 1874 in the Rue St. Georges, has recently removed its quarters to the Rue Chanchat: so here an elegant building has been erected under the care of M. Sauffroy, architect, on part of the ground occupied by the old Opera-house, the materials used being stone and iron. The entrance opens on to a spacious hall, round which the different bureaux are placed. On each side of the vestibule are offices where business of a private nature is transacted. On the first-floor are the offices of the president of the council, and the directors; reception saloons, and the spacious board-room, which occupies the whole of the façade, and is in itself a handsome example of decorative art.

The cellars are lined with iron,—floor, sides, and roof; in case of fire water can be turned on from a plug arranged in the walls, and the cellars almost immediately inundated. Along the sides of the first cellar are ranged immense iron safes for the reception of French and foreign bonds, shares, deeds, bills of exchange, gold and silver coin of all nations; in this cellar also can be deposited, under seal, bullion, gold and silver plate, diamonds, and precious stones, &c. Another cellar, no less solidly constructed, is destined for the reception of other iron safes, which can be hired at a rate varying from 5fr. to 12fr. per month, or from 50fr. to 120fr. per annum; each safe will have a secret fastening, which can be selected by the "locataire" from 15,625 combinations;



THE PARISIAN BANK, PARIS.—M. SAUFFROY, ARCHITECT.



each will be further provided with a separate patent lock, so that any one can have his or her private safe at the Parisian Bank, guarded day and night, and be at liberty to visit it daily from ten to four o'clock, Sundays and fête days excepted.

Its excellent organisation has hitherto made the Parisian Bank a success. The cost of the building was 16,400*l.*

ST. ALBAN'S ABBEY.

THE NAVE ROOF.

SIR,—See the disappointments which come to advocates of conservative restoration! When you published my drawing, showing the state of the case with reference to the roof (p. 69, *ante*), it was supposed that everything would be at an end directly,—the Faculty Committee and the more important subscribers would, of course, meet on the roof, opposite the west face of the tower, set up some cords to represent the roof-lines, and pass a resolution on the spot, ordering the maintenance of the present roof, and letting the proposal for the high-pitched roof be quietly forgotten. No one need remain more than a quarter of an hour on the roof before being ready to vote on the question. A nail driven in at the apex of the proposed roof, and a cord fixed to represent the proposed roof-line, would show that there are *no traces* of such a roof-line upon the tower. The cord would run in front of tilework which has not been altered since the original construction of the tower. The line which it is proposed to follow would thus be proved to be merely a new roof-line, assumed because it would allow the parapets to remain with gutters inside them. The implements of investigation would consist of one nail and 30 ft. of string, and the "*method of investigation*" would be tying one end of the string to the nail, and holding the other end.

Mr. J. O. Scott, in his letter in the *Builder* (p. 105), seems to convey that something prodigious is necessary in order to get at the state of the case in this very simple matter: this is quite a mistake. He also implies, but I think will not venture to assert, that my drawing is incorrect. I do not profess to be infallible, nor uncandid, and am, therefore, entitled to state that I cannot confess being careless. In a matter of this importance, the setting-up lines were not only directly tested twice, but also indirectly tested in various ways. The tiles were not simply sketched; the more important ones were traced from the wall upon tracing paper; they were all counted, and their dimensions taken. The work of several hours sometimes only gave me a piece of tilework about 5 ft. high. I have given to Mr. Scott and all others a distinct challenge that *my* drawing may be submitted to any amount of scrutiny. I was well aware that the temperature was frequently "well below freezing," and that the task might have served as a competitive examination among volunteers for Arctic service. When visiting St. Alban's again and again, I was at times tempted to give up the task, and should not have carried it to the end if it had been a question of mere personal credit. It seemed to me a question of principle of the most important kind, involving the whole theory of conservative restoration, and, by implication, the credit of the whole profession of architects for patient investigation, and honest acquiescence in the result of it. I am inclined to think that many members of the profession would have undertaken the same duty if they had known the building as intimately as

JAMES NEALE, F.S.A.

SIR,—Those who support the Faculty Committee should be prepared to answer the following questions:—Question *a*. If a line is drawn along the two lengths of actual groove which exist on the west face of the tower (A B and C D on page 69, *ante*), will these grooves be found to be parts of one and the same groove? I have pulled a cord along these grooves, and really see no room for doubt on the subject. They are parts of one and the same groove,—the intermediate portion having disappeared when new tiles were inserted. Mr. J. O. Scott appears to fancy that the two lengths of groove are in some way independent of each other,—parts of two similar grooves made at different dates.

Question *b*. If a line is drawn along the line of the proposed roof (G H on Mr. Neale's drawing), does it pass over unaltered original tilework?

If those who support the Faculty Committee answer question *a* as I do, and as I think everyone must, they deprive the proposed roof-line of the only piece of *direct evidence* in favour of its previous existence. Mr. Neale's drawing is no doubt correct as to the line G H passing over original unaltered tilework for considerable portions of its length.

Thus, if "Yes" must be answered to both questions, the proposed roof-line is acknowledged to be an assumed line,—which cannot be found on, or deduced in any way from the condition of, the tilework of the tower. If any one is disposed to answer "No" to either or both of the questions, the answer should be given *distinctly*. The "ultimate court of appeal," as Mr. Hebb calls the general body of the public, need not be kept without an answer when it can be conveyed in a monosyllable.

S. FLINT CLARKSON.

SIR,—I do not wish to enter into the controversy which is now being carried on,—principally on one side,—about the roof of St. Alban's Abbey, having already shown my opinion on the subject by withdrawing from the Faculty Committee, rather than be a party to a measure which I regard as "impolitic, mischievous, and needless." The impolicy of permitting such a thorough innovation in an ancient building in defiance of the opinion of the most competent architects and our principal archæological societies, is becoming every day more and more apparent. The mischief cannot stop with the roof of the nave, but the alteration in that roof will almost inevitably lead to the destruction of other historical features of the building; while the needlessness of the alteration must be patent to all, inasmuch as one-third of the existing roof is acknowledged to be in good repair, and the remaining two-thirds to be susceptible of being "rendered sound and serviceable."

My object in addressing you is mainly for the purpose of again calling attention to one or two points in the history of the Abbey, which appear to somewhat overlooked in the discussion which is now going on.

We read in the "Gesta Abbatum St. Albani" that in the year 1323, when Hugh de Eversdone was abbot, two great columns of the south side of the church gave way at their foundations, and fell one after the other. Within an hour afterwards the whole of the roof which had rested on those columns, together with part of the south aisle and nearly the whole of the adjoining cloister, fell to the ground. The portion of the wall which fell may now be identified by the Decorated bays of the south wall, which in the clearstory extend about 100 ft. in length. Though the repairs were begun by Abbot Hugh, it was not until more than twenty years afterwards, during the abbacy of one of his successors, Michael of Mentmore, that the building was completed and the new work covered in.

The date, therefore, of a newly-constructed roof of one kind or another, and extending over 100 ft. of the nave immediately west of St. Cuthbert's screen, may be fixed about the year 1345.

When it is borne in mind that it was Hugh of Eversdone who completed the lady-chapel and its ante-chapel, the roofs of which are of low-pitch, it appears by no means improbable that this renovated roof over the nave was of the same character. It is true that over the south aisle the roof was of high pitch, but over the north aisle a low-pitched roof must already have been placed before the days of John of Wheathampsted (1420-1464, with an interval), or he could not have inserted the windows in the triforium on the north side of the nave to make "the church appear more light and glorious." As to the date of these windows, Mr. Neale seems inclined to place it before 1430.

If we assume that Abbot Mentmore's roof was of the original high pitch, and not of the low, we are in this difficulty,—that a roof erected in 1345 became, within about a century afterwards, so ruinous that, in common with that over the rest of the nave to the west, it had to be replaced by one of low pitch. The low roof west of St. Cuthbert's screen is all of one character, though some parts of it may have been more disturbed in modern times than others, and we can conceive it possible that this part of the nave-roof may have been of the low pitch, while that nearer the tower was still of the high. We cannot, however, well regard the part of the roof next the tower as having been the first to be lowered, while a high-pitched roof still existed over the same building to the west. It is, therefore, of importance to determine the date of the roof over the three eastern bays of the nave. There can, I think, be little hesitation in assigning the painting of the ceiling in this part of the church to the first half of the fifteenth century. The painting is also, according to Mr. Neale, on the main beams of the roof as well as on the panels, so that the roof must be of at least as early a date. Mr. Neale's recent researches have shown that on the western face of the tower there are no traces of any roof intermediate in date between that of Norman times and that at present existing. What, then, can be more likely than that the western part of the nave-roof was reconstructed of the low pitch after the fall of a portion of it in the fourteenth century, while the alteration of the remainder was carried out early in the fifteenth? Had such an extensive work as that of re-roofing the whole of the nave been undertaken during the fifteenth century, we should surely have found some record of the fact in the pages of the chroniclers of the abbey.

I am aware that Mr. Street has assigned the construction of the western part of the nave roof to the close of the fifteenth century, but, with all deference to his infinitely superior experience and knowledge, I would call attention to the fact, that the construction with three vertical posts supporting a ridge-piece and two purlins, all placed vertically, and with braces from the king-post to support the ridge-piece, are features which the western part of the nave-roof has not only in common with that of the nave of South Mimms Church, but also with the roof of the ante-chapel of the lady-chapel at St. Alban's, which was constructed about 1320. Curiously enough, the foliation of the painted panels of the nave-ceiling at St. Alban's appear to have been imitated also from the carved panels of this same ante-chapel roof.

One word as to what is likely to be the fate of the abbey unless some such course is adopted as that advocated in your columns by Mr. John Hebb. It is simply this, that the old roof will in all probability be absolutely destroyed, and not even preserved within the new roof (like a skeleton in a cupboard) as was last proposed. Moreover, the new deal roof, which, as I have all along maintained, cannot be of "the original pitch indicated by the weathering on the tower," is likely to be covered with slate and not with lead, for the preservation of the old roof in any form is contingent on sufficient subscriptions being raised for the purpose, and the funds, present and prospective, at the command of the Faculty Committee, were not when I retired from that body anything like sufficient to meet the expense of even covering the miserable deal roof with slate.

Possibly money may have since come in, but every one I meet is so thoroughly discontented with the course adopted by the committee that I much doubt it. Surely it cannot be too late to arrange with the contractor to substitute sound repairs for injudicious innovation, and thus restore the confidence of the public. Without this is regained, it requires no prophet to foresee that the reparation of the eastern part of the cathedral, which is much more pressing than that of the eastern part of the nave roof, is likely to be postponed to another generation. Perhaps, after all, it is as well that it should be!

JOHN EVANS.

SIR,—Is there no way in which the architectural profession can settle for the world at large a simple matter of fact, not more difficult to settle than whether in a town twenty miles from London a table is in one room or in another?

I have followed very carefully the controversy on the question of the nave roof, and when you gave, in a recent number of the *Builder*, that most valuable drawing by Mr. Neale, I anticipated that the matter would be finally settled. The roof-line indicated by the grooves on the west wall of the tower evidently could not be adopted while the parapets remain. The roof-line which the Faculty Committee proposes to follow does not appear to be warranted by any existing remains on the tower itself. I have looked in vain in drawings and reports for information in respect to this proposed roof-line, except that Mr. J. O. Scott has stated "that the evidences are by no means conspicuous." I cannot find any of the evidences mentioned, and

am driven to the conclusion that the Faculty Committee either have no case, or that it has been incompletely presented.

It is much to be wished that the Institute of Architects would express an opinion on so important a professional matter. It is not this building only which is in question, but the theory of restoration as it is to be pursued throughout the length and breadth of the land. The Society of Antiquaries and other societies have already made themselves heard on the side of conservative restoration; and surely that of the architects ought not to remain silent about one of the most important questions which has arisen in our time. Before a special general meeting be held, I would suggest that a small jury of the leading members should, with the consent of all parties, be kindly requested to visit the abbey as representatives of the Institute to decide finally about the facts of the case. After that, a full discussion might take place, and, it may be, a vote taken; the body of architects would not then appear so indifferent as to the proper care of our ancient monuments as some ill-natured people are disposed to think they are. Bowes A. Paice.

Sir,—So they are proposing to place a new roof on the old walls of the time-honoured abbey church of St. Alban's?

As well may they make a covering or a high roof, in an *improved* style, over the old Norman arches and columns of the staircase near the King's School, Canterbury.

I certainly have no enthusiasm for what is called "restoration," having a respect for ancient buildings, not simply because they are old, but because they represent the times, the spirit, and the opinions of the people for whom they were constructed, and I hate shams,—sham Norman, sham Decorated, and sham Perpendicular.

I do not heedlessly condemn all restorations. Some ancient buildings, doubtless, may be improved by putting back something which once existed, and which made them more complete. I must be assured, however, that that something did exist.

Improvements of old buildings are too often the crude emanations of the fashionable notions of the day, and of an artificial taste as evanescent as, taking all the surroundings into consideration, it is inappropriate.

I trust the abbey, as far as its present roof is concerned, will be allowed to remain intact. There is plenty of scope for enterprising genius, and speculative architecture, in the constant requirements of the present day,—for new churches, new hospitals, and new asylums.

John Brent, F.S.A.*

ST. ALBAN'S TOWER AND CEILINGS.

Sir,—I trust that Mr. Clarkson is right, and can prove that the last century's circular windows in St. Alban's tower were innovations, and the present ones truly restored; because the circles would plainly not admit sufficient light, whether the stories above are used for bells or opened to the top; and I have always thought the present windows had a very genuine look in themselves, though a spurious one in Carter's drawings, who lengthened and classicalised them.

As for the mare's nest of the choir ceiling, it may be true that there have always been sixty-six panels, in eleven rows of six, since the fourteenth century; but no less true that, ever since engravings have been current, in books or periodicals of any sort, they have "always" depicted but twenty-four panels, in six rows of four; always copying from Coney's great perspective of the nave, which carries the four files of barbarous sham panels right through to the tower. As it happened that the last time I had viewed the interior, and only time with much attention, a screen of canvas or plaster went up to the roof, exactly where the abomination ends, I was really in the position of a foreigner, familiar with it only through these nest-building mares.

Speaking of abominations, however, Heaven forbid I should say a syllable tending to help, in these days, those who would touch anything, genuine or spurious, abominable or not, that can possibly be let alone. This is no time, nor will ever be a time, while the Canaanite and Hivite are still in the land,—the Percentage-on-outlay-payer and Percentage-on-outlay-receiver,—for cleaning off distemper, or anything of the sort. Days may come, let us hope, to be seen by some of us, as different from these as Bluff Harry's latter days from his earlier. Despair can least of all be entertained in presence of monuments like this, reminding us what big-looking orders of men have gone on,—"they ate, they drank, they planted, they builded, till the day," . . . . and how profoundly appropriate was the text wherewith Ruskin closed his first architectural volume, "The sun was risen upon the earth when Lot entered into Zoar." As it was with Dominicans and Franciscans, "white, black, and grey, with all their trumpery," even so, one of these fine summers, with R.I.B.A. and sundry royal things besides; and when some debased professions and trades have been cleared off, debased paintings, yea ceilings, and even roofs, may safely begin to follow, but never till then. And then, as the restored design of the main ceiling will have about 280 panels, it may seem exactly made for portraying, in medallion heads, the whole army of British and English martyrs, who followed St. Alban during the predicted "thousand, two hundred and sixty" years of their witnessing (Rev. xi. 3); but most of them in the last half-dozen, precisely while those lately-effaced distemper daubs were daubed; for Carter's engraving of them fixes their date, I think, to Philip and Mary. They were too inartistic to be earlier, and nobody later would have let the Assumption be repainted. But, I repeat, all conceivable physical restoration is only work for good times coming, and Heaven forfend it at present. For, as the monkish palindrome on the fonts used to be written,—

Νιψον ανομηματα μη μοναν οψιν.

That is to say, "O ye restorers, begin by scraping off percentage from hands, instead of distemper from ceilings." E. L. G.

QUANTITY SURVEYORS AND ARCHITECTS.

ACTION FOR FEES: GORDON *v.* BLACKBURNE.

This action was heard in the Lord Mayor's Court, on Friday, the 24th ult., before Mr. Woodthorpe Brandon, Assistant Judge. It involved a question of considerable importance to architects and quantity surveyors. Mr. Dickens appeared for the plaintiff, and Mr. Bremner for the defendant. In stating the facts, Mr. Dickens said the plaintiff is a surveyor, carrying on business at Weavers' Hall, Basinghall-street. Defendant is an architect practising at Blomfield-street. On September 2nd last, plaintiff received a letter from defendant making an appointment, and at the interview which ensued defendant stated that he wished plaintiff to take out some quantities for a house to be erected at Forest-gate, at the same time requesting terms to be specified. Plaintiff remarked that, as it appeared a small matter, his charge would be 2½ per cent. Three days later plaintiff received from the defendant the drawings. Plaintiff took out and completed the bills of quantities. Previously to completing them, he saw the defendant, and asked if he should have the draft quantities lithographed for him. Defendant replied in the affirmative, and accordingly the quantities were sent to Messrs. Sprague, in order that they might undergo the ordinary lithographic process. Messrs. Sprague returned the quantities, which were sent to Mr. Blackburne, so that he might forward them to his builders. Plaintiff on October the 14th called on the defendant for a cheque on account. The latter said it was inconvenient to pay anything at that time, but he would send a cheque in a few days. Plaintiff then asked who had accepted the tender. Defendant answered that the lowest tender was too high to suit his client, and that the drawings would have to be modified. He added that he had a difficulty with his client, inasmuch as he had not received instructions direct, but from a third person. Plaintiff remarked,—"How foolish it is to undertake work and render yourself liable for quantities upon such a slender basis; I must not suffer for that." On October 29th the plaintiff wrote to the defendant to the effect that he should look to him for payment; but as he had not got a settlement of his claim he was compelled to bring the present action.

The plaintiff was called, and in his examination stated that he had often taken out quantities for other architects, and that it was usual to look to the architect for payment, even when a tender was accepted and the work went on; it was the custom of the profession that the architect paid the quantity surveyor, and was reimbursed by the builder; when the work fell through, the architect paid the surveyor, and charged the amount to his client. He supposed that he must have seen the name of the owner (the defendant's client) on the drawings and specification, but he knew nothing of him.

Mr. Meeking, architect, was called for the plaintiff, and deposed that the custom of the profession in their dealings with surveyors was that the architect instructed the quantity surveyor, and that the latter was sometimes paid by the architect for the owner, and sometimes by the builder; the usage when no tender was accepted was for the surveyor to look to the architect for his fees. Mr. Charles Young, architect, confirmed the latter statement.

Mr. Bremner, for the plaintiff, submitted that there was no case to go to the jury. The defendant when he employed the plaintiff was acting according to usage as the agent of the owner, a disclosed principal, whose name was on the drawings and specification, and cited "Moon *v.* Witney Guardians, 3 Bingham, N.C. 814."

The Assistant-Judge held that the case must go to the jury to decide whether there was a personal employment of plaintiff by defendant, or whether the defendant employed plaintiff as an agent, not disclosing his principal; if so, the plaintiff could elect whether he should go against principal or agent, but if the jury should find that there was only the ordinary relation of architect and quantity surveyor between defendant and plaintiff, and that defendant acted for a disclosed principal, then the verdict would be for defendant.

Mr. Harston, architect (A. & C. Harston), was called for the defendant, and deposed that the usage was for the architect to employ the surveyor as agent of the owner, and that the fees of the quantity surveyor were paid by the builder. It was not the custom for the architect to pay the surveyor in cases in which the building was not proceeded with, but for the owner to do so, having been made responsible by his agent, the architect. His firm had never paid the fees of a quantity surveyor, nor was it the custom to do so, as had been stated by plaintiffs' witnesses.

Mr. Francis, architect, and a member of the council of the Institute, corroborated Mr. Harston.

The defendant's counsel addressed the jury, saying that of course the architect gave the order; he always instructed the quantity surveyor. What would be the use of a building-owner trying to do so? He does not understand the matter, the terms used are a jargon to him, and he leaves it to the architect.

Mr. Dickens, for plaintiff, said this was really an undefended action, and defendant was trying to evade a liability properly incurred both by custom and special contract, and his client had nothing to do with the owner, Mr. Leftley, and never heard of him.

The learned Assistant Judge directed the jury that the amount, 22*l.* 10*s.* 3*d.* was not in dispute, but only the liability of defendant to pay it. There was no doubt of the usage that when a tender was accepted, and the building went on, the builder paid the quantity surveyor, having previously added the amount of the quantity fees to his estimate, so that eventually they came out of the pocket of the building-owner. But in this case there is no builder, as no tender has been accepted. They would consider if there was any relation between the parties other than the ordinary one which subsisted between architect and surveyor. Plaintiff says there was a personal employment and promise to pay. They would have to consider the evidence and look to all the circumstances of the case, and say whether that was so. Was the plaintiff made aware that the defendant was only the architect to Mr. Leftley, or were the circumstances such as to justify the plaintiff in considering that he was employed by the defendant as principal?

The jury found for the plaintiff, and in answer to the judge said that they found that the plaintiff was employed by defendant personally, defendant acting as principal.

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* The feeling in opposition to the unwise determination of the committee to change the character of St. Alban's Cathedral increases rather than diminishes. We have received letters from men of all sorts and conditions, but are compelled to restrict ourselves to a selection.

THE POETRY AND ROMANCE OF ARCHITECTURE:

WITH A VIEW OF SHOWING ITS CLAIMS, AS A FINE ART, TO GREATER POPULARITY, AMONG THE EDUCATED OF BOTH SEXES, THAN IT HAS YET ENJOYED.*

ARCHITECTURE has the unenviable distinction of being the least popular of all the fine arts, *i.e.*, fewer educated people take interest in it or know much about it. The following remarks are offered with a view of showing something of the attractiveness of its character, and what interest, from various circumstances, attaches to it for all. They were written some two or three years ago, and are the result of impressions of many years' growth.

That architecture should be somewhat less loved and sought after than poetry, painting, sculpture, or music, is, perhaps, not surprising, but that it should be at all slighted or neglected by educated people generally is very surprising indeed. But that it is slighted is a fact, and that great ignorance prevails on it is another; proofs of which abound throughout literature, wherever allusion is made to architecture for illustration or otherwise. The greatest difference between it and the other arts lies in its connexion with, and sworn fealty to, material requirements, and its necessity of working under restrictions therefrom arising. We see this distinction observed in most styles, including some of the greatest the world has yet seen; in those of Mediæval Europe, for example, in which a prominent aim was to engraft art and beauty on the features of utility and necessity, and to carry beauty into domestic as well as into sacred and monumental edifices. The Greeks, it is true, ignored the principle, and drew a line between domestic and public architecture, regarding only the latter as possessing the rank of a fine art. But surely the course pursued by the Mediævalists was the true way, and most consonant with the method of Nature, who contrives to give to everything, however humble, its modicum of beauty.

The restrictions, however, arising from physical requirements are not so grievous as might be supposed, seeing the most important features of architecture,—doors, windows, &c., are as susceptive of beauty as if they were for beauty only.

In the view I have adopted of it, while all the other arts minister to our higher necessities only, architecture,—under which term I include engineering, for all structural works, bridges, castles, lighthouses, &c., ought to be permeated with the spirit of beauty, and not alienated from the life of art as they generally are,—ministers not only to the higher but to the lower or physical. It is the art of building usefully and beautifully, which, connecting it at once with every part of our nature,—the physical, the emotional, the intellectual,—connects it also with every part of our life, and everything we hold dear, and which beautifies and ennobles life. And with every dream of future happiness you cannot imagine a scene in

> "Some bright little isle of our own"

without some bits of architecture here and there; and the lightest visions that float round the artist's or poet's head are sure to disclose glimpses of snow-white arcade or pavilion, lattice or oriel window peeping through their evergreens and amaranths. A genuine production of architectural genius is in itself an epitome of the world; the author has succeeded in focusing the rays of the universe. It appeals to the entire range of our faculties. Like Nature herself, it has reference to, and is in harmony with, man's entire constitution. His physical wants are supplied by it, as shelter and warmth. It is a means of gratification to our social sympathies. Our understanding, our passions, our imagination, are alike gratified by it. This universality of architecture gives it the precedence of the other arts. It has to go before them and prepare the way. Where architecture is not there is no place for them; at least, in its incipient state, as building, it is the oldest of the arts.

No institution can be established without the aid of architecture. It gives to art its gallery, to science its museum, to literature its library, to education its college and school, to benevolence its hospital and asylum, to religion its temple. It gives also to affectionate memory of the departed its shrine; and it is to architecture chiefly, whose monumental memorials are of all such works the most famous and the most durable, that the great master-spirits of the world, before the invention of printing, trusted for posthumous renown. It is even associated with the future state, for it enters into the account given of heaven in the Scriptures, where we read of our Father's house, and of a river the streams whereof shall make glad the city of God; the wall of which city is jasper on a foundation of precious stones, the pavement of pure gold, and every one of the twelve gates a pearl. It is otherwise figuratively referred to in various parts of the Bible. "In the time of trouble," says David, "he shall hide me in his pavilion; in the secret of his tabernacle shall he hide me."

All this, and the influence of building materials, climate, &c., render architecture, like ourselves, the creature of circumstances, which she is to a greater extent than any other of the fine arts. It is true this material and utilitarian element brings her into connexion with some low offices—kitchen and scullery, and those melancholy necessities of humanity, water-closets, sewers, cesspools, &c.,—and obliges her to call in the aid of certain grossly material and mechanical arts or handicrafts called masonry, bricklaying, carpentry, joinery, plumbing, &c., with soiled hands and aprons. But these are merely her instruments or ministers, who build like Amphion to her music, which render even them more honourable than most other handicrafts, from their connexion with art and beauty, and enables them to boast more than others "the nobility of labour, the long pedigree of toil." Moreover, they are only seemingly, not really, low, being, along with ventilation, heating, lighting, based on or in some way connected with various sciences,—chemistry, geology, algebra, conic sections, geometry, statics, dynamics, — which bring them into relationship with astronomy and the sublimest pursuits of the human mind. They therefore add to rather than diminish the lustre of architecture, which includes more arts within it than any other art.

But if they degraded her, she would be fully indemnified for any loss of dignity by the ministration of sculpture and painting, two superior arts as considered in themselves, who, along with landscape gardening, become her handmaids for the finishing and elevating of her works. Architecture can fully satisfy the mind without their aid,—that is, she is a perfect art in herself, and independent of them, as poetry is of music. But on certain architectural surfaces,—walls and ceilings, pediments, metopes, friezes,—painting and sculpture may bestow their highest efforts, in the shape of pictures and *bassi relievi*, not as independent works, making use of the building as a frame, but in strict subordination to the genius of the architecture, for its embellishment, and for that alone. Such is the sculpture, I believe, of the pediments, friezes, &c., of the Parthenon by Phidias; such are the paintings of the ceiling and walls of the Sistine Chapel by Michelangelo. The Apollo Belvidere, the most ideal god-like statue among the numerous remains of antiquity, may for aught we know have been an architectural ornament. Even poetry may be considered a handmaid of architecture; for she can supply inscriptive matter, giving rhythmic utterance to the sublimest truths for architectural adornment. And not only has the highest art been employed in architectural decoration, but the richest materials,—gold and precious stones, as in tombs and palaces of India, and in the golden house of Nero, for example.

Another distinction of architecture among the fine arts is that her works appear as a second, an intellectual birth of nature, and give as it were the finishing strokes to the earth, over the natural features of which they have the advantage in showing an inside as well as an outside. Such are detached buildings of all ranks strewed over the country, — cathedrals and abbeys, castles, palaces, mansions, villas, cottages, village churches,—which become gems and jewels of the earth, having a magical influence on its aspect. How delightful to cast the eye over a wide plain, studded with these mementos of human life! some time-honoured, others comparatively recent,—one within its own domain of orchard, garden, park, or thickly and lovingly shaded with trees,—another isolated, reminding us of the innumerable ties that bind us to humanity of every grade, and how humanity of every grade is linked to the Hebe-mother, earth and nature, whose love for these creations of man is emblematical of her love for him. She embraces these children of architecture as she embraces her own works, rocks, trees, and hills, as if she recognised them as her children's children. How they rescue the scene from that melancholy loneliness of expression which inevitably attaches to scenes composed of natural objects only. How often is an old ruined castle, surrounded by its turrets and battlements, sometimes lighted up by a ray of orange-coloured sunlight, at others half lost in fog or mist, the life and soul of the landscape, the removal of which would produce a mournful and intolerable blank!

This new birth of nature includes some of man's greatest achievements, in which we see him at his grandest, competing (if I may so speak) with his Creator; in some lands embodying a power that seems superhuman, as in the Great Pyramid, the works of the Pelasgi, the Indian cave-temples. These, as indeed some domed and vaulted buildings, as Milan or Amiens Cathedral, or the choir of Beauvais, "a church in the air," for example, which latter shows stone vaulting 167 ft. high, the strain of which is conveyed to the ground by buttresses, if they were to tell their own tale by inscriptions, in the manner of the Moorish buildings, might exclaim, with the Psalmist, "We are fearfully and wonderfully made." Architecture, as in some of the works just mentioned, soars high into the air and burrows into the ground,—and no art does so much to enliven and charm the world, and to enrich it with beauty and sublimity.

As the most interesting objects to man are man and his works, these must always form the greatest attraction of travel. The works of God, it is true, are great, sought out of all those that have pleasure therein; but that "God made the country while man made the town," a sentiment, as I think, unworthy of Cowper, its author, is scarcely a correct view of them,—for God made both; and the town has the advantage over the country in embodying the wisdom of both God and man. Moreover, natural scenery, though it differs with every country, presents a general sameness, and appeals to a comparatively narrow range of sympathies; while the works of the architect show striking change with every country and age of the world; and the buildings of the East are as wide apart in character from those of the West, and the edifices of ancient from those of modern times, as the poles asunder. What is America, with all its gigantic natural features, its dense forests, and mighty rivers, sublime as they must be in the almost uncultivated majesty of nature, in point of human interest, compared with Europe or Asia? What is the St. Lawrence or Lake Superior, or the Falls of Niagara, to the pyramids and temples of Egypt and Greece, or the stupendous sculptured caverns of India? Natural objects are more or less dependent on times and seasons for their attractions; but at no period of the year can these works of architecture be viewed without exciting the liveliest sensations of wonder and delight. In the most beautiful countries of the globe architecture heightens the beauty or sublimity of the fairest landscapes.

> "Earth proudly wears the Parthenon
> As the best gem upon her zone;
> And morning opes with haste her lids
> To gaze upon her pyramids.
> O'er England's abbeys bends the sky
> As on its friends with kindred eye."

What is there in Hindostan compared to the temples of the Hindoos and the palaces, mosques, and tombs of their Mahommedan conquerors? Its natural productions, the tamarind, the banian, the peepul, with the bright, rich green foliage and lustrous flowers of which temple and tower, pillared arcade, and balustraded terrace are interspersed, may be transplanted and made to grow in the plant-stoves of England, but not the architecture. It is the latter, I believe, more than anything else, that renders the gem-fraught land a land of wonders. The isolated excavated Temple of Kylas, which has been termed the Paradise of the Gods, raises, it is said, mingled emotions of pleasure, amazement, and reverential awe in the breast of the most stolid visitor. What is there of natural feature in France compared to the great Mediæval cathedrals? What amid the charming scenery of Andalusia would conjure up fairy scenes like the halls and courts of the Alhambra? What images more impressive does the name of Egypt and the Nile call up to the imagination than Karnack, Luxor, and the Memnonium, with their

* By Mr. Samuel Huggins. Read at a meeting of the Liverpool Architectural Society, Wednesday, January 22.

accompaniments of obelisks, sphinxes, colossi, which, we know, have been objects of wonder to the most intelligent visitors since the age of Herodotus?

Enter the cities. What are they but architecture which strikes at once as the eyes, nose, and mouth of the place? What was the hundred-gated Thebes but temple-palaces with their lofty pylons? What is there at Athens but the Acropolis and its architectural treasures? What is Venice but an architectural gem set in the brightest of seas, reflecting the brightest of skies? What are Florence and the Eternal City but thier charmed stones,—Nuremberg, but its harmonious bricks?

Again, most educated people have a fondness for history, as, next to what is to be in the future, nothing is more interesting than the inquiry into the past. But here are history's landmarks,—her rolls, her tablets. Architecture is history's self. In it history is more vividly and unquestionably written than on the printed page. In the career of architecture, its multifarious varieties in different countries and mutations in course of ages, we have reflexes of human feelings and human genius as influenced by the various circumstances, more especially religion, and the inherent mental peculiarities of race under which man is placed in the world. So much is this the case, that a diagram chart of the styles of architecture is a rough chart of political history, of ethnological history, and history of religions. Few people are aware, while reading of the rise and fall of the ancient empires, the rise and progress of Christianity, the conversion of Constantine the Great, the division of the Church into the Latin and Greek communities, the incursions of the Teutonic tribes upon the Roman empire, the rise and conquests of Mohammedanism, the Crusades, the Iconoclastic persecution in the Eastern Empire, the Norman conquests in Italy, France, and England, and invasion of Apulia and Sicily, the capture of Constantinople by the Turks, the Reformation, the expulsion of the Moors from Spain, that these events have all their corresponding ones in the history of architecture, and have built themselves on to the surface of the earth. It is said, I doubt not with truth, that the Xanthian marbles in the British Museum show the three-fold connexion between Assyria and Persia, Persia and Asia Minor, and Asia Minor and Greece. The vast despotism of the Cæsars, gradually effacing all national peculiarities, and assimilating the remotest provinces of the empire to each other, may be read in the uniformity of style of the architecture of those centuries, which was all Roman over the whole Roman or civilised world till the fifth century, when the Byzantine took its rise. There were no other styles practised in the world at the time except a Sassanian, a Buddhist and Chinese. The extensive commercial intercourse of the Venetians with the East, commencing with the Crusades, which opened to them all the Syrian harbours, and led to a universal monopoly in the Greek empire, and to a partial sovereignty in 1204, may be read in the beautiful Oriental character of their architecture, and their proneness to colour. The origin of the Northern Gothic is similarly traceable in history. There is, at least, a striking analogy between the manner in which the qualities brought with them from their forests and marshes by the Northern warriors,—energy, independence, the dread of shame, the contempt of danger,—mingling with those of effeminate classic races in the Roman Empire, produced, after generations of ignominy and confusion, the modern European character, and the slow generation of the Gothic style of architecture by the same people out of the decadency of the classic Roman,—Christianity, I need scarcely say, entering as an element into both.

The cathedrals of Europe are monuments of Catholicism, as Versailles and the Escurial, the Mafra and the Kremlin, are of monarchy or kingly power, and as the Hôtels de Ville of Ghent, Louvain, and Ypres mark the rise of the free cities and progress of popular liberty. What throws light on ancient Roman civilisation, and shows its contrast with the Christian, like the blood-stained Colosseum? And is it not in the great old palaces of Italy that we learn most about the ancient Italian aristocracy? What could have thrown so much light on, or made so startling a revelation of, the social and domestic condition, the morals and manners of the people of Magna Græcia, at the epoch of Christianity, as the exhumation of Pompeii, which was the skeleton or shell, so to speak, of the deceased community which had occupied it? This luminosity of architectural remains it is which gives to the ancient cities of Europe and Asia their surpassing interest, and renders the smallest remains of ancient buildings everywhere the objects dearest to history, to knowledge, to the human mind,—which may more especially be said of the relics of temples and shrines of the various oracles and religions, from their psychical connexion with the different faiths of mankind. By its architecture, Rome, aptly called the Eternal City, is the great link that connects the ancient and modern civilisation,—the world of Paganism and the world of Christianity. It is the grave of the old world and the cradle of the new. Look on the Triumphal Arches, overgrown with ivy and wall-flowers, and you have evidence of her rule as mistress of the world, when through her streets passed the ivory chariots of the conqueror, the golden eagles, the laurelled fasces, the shouting legions, in victorious procession. "When I search," says Lamartine, "amongst my impressions of Rome, I find two which overwhelm all others,—the Colosseum, that work of the Roman people; St. Peter's, that *chef-d'œuvre* of Catholicism." What is perhaps most important to observe therein may be traced, amid monuments and mementos of everything that is interesting in the history of the world, the gradual rise and growth of modern civilisation and refinement. As remarked by Goethe, who reckoned a new birthday from the day he entered Rome, wherever you turn your eyes you meet something imposing or affecting from its history or associations.

But it is important to observe that great buildings do not merely bear witness to the great deeds of former generations, like the written page; they are among the great deeds themselves, and independent of written evidence, by which architecture becomes more mixed up and identified with general history and great public and political events than any other of the fine arts. They are the greatest sufferers from war, and stand as monuments, not only of the wear of time, but of the wrath of man. The latter variously illustrates great events; but architecture is essential to them. The erection of a great building is a great public event itself, and great buildings form the chief trophies of the power and magnificence of the conquerors and potentates of the earth; and pre-historic buildings are the more valuable for being the only evidences of their creators remaining.

In these, architecture unites itself with mystery, and carries the mind back into mythological ages, linking the real and known with the half-forgotten time, and with heroes and demi-gods,—with Hercules, with Perseus, with Theseus, and the rest. The Pelasgic and Cyclopœan remains seem, indeed, to be the work of such superhuman agents, as do the vast excavated dwellings and sepulchres in the rocks of Petra, supposed to be the Bozra of the Bible. In Ellora and Elephanta the eye roams bewildered over scenes of romantic beauty, which it is baffled in its endeavour to trace to human agency.

An ancient building may be said to hold the spirit of the age to which it belongs embalmed, and to be fraught with memories of all the events that have occurred in and around it; which gives it an interest for creatures of a day like ourselves it would be impossible to over-estimate. With what awe we should look upon a man that had seen William the Conqueror, or even Queen Elizabeth! But an edifice that has seen these has its face so wrinkled, so thought-lined and marked, if I may so speak, by time, that it seems as conscious almost as a human being; by which it has gained a power over the imagination that no combination of natural features could have. Who visits the Parthenon, looks on that which has looked on Phideas, and which reflects the loving gaze of Pericles. In our own country, what has not the old Tower on the Thames witnessed of England's worthies and martyrs? Charles I. saw his army defeated from a bastion-tower of Chester. Charles is gone, but the tower which remains saw the same event, and you cannot gaze bodily upon that tower without gazing mentally upon the battle.

Though domestic buildings are not generally the most ancient, yet there are none to which this charm clings more than to them. Gazing on some old houses, it is difficult to regard them as inanimate objects. They appear to have a life and history of their own as contemplative and enduring as a human existence; and as rich with long experience of sunshine, and storm, and the events of birth, marriage, and death, wherewith they have joyed and grieved.

But architecture, for its own sake, should be more popular than it is. It is not, any more than philosophy, "harsh and crabbed," but "musical as is Apollo's lute." Its breath is poetry. It is to the eye what music is to the ear, and goes through it as a gate to the soul itself; which I believe is felt in a high-class church, where sublime architecture has a charm to uplift the soul, and aid a divine exercise of all the powers and passions of the mind, like grand music. Architecture is, equally with the other arts, which are all intimately bound together by analogies and sympathies, related to the divinest of all human pursuits—poetry. It has, indeed, a more mental or ideal origin than painting, sculpture, and music, being not like them a direct, but an analogical imitation of nature both in general design and decoration; and the highest architectural ornament, as in that rare architecture wherein the beautiful "developed its ripe proportions," is most ideal.

There is, therefore, something anomalous in people fond of music and poetry passing by an edifice, embodying any artistic genius, without notice, at least if they make any pretentions to taste, which is the inward light or intelligence of universal beauty; a truth which accounts for the fact that in Greece, the birthplace of true art, poetry, architecture, painting, sculpture, and music sprang up together the beautiful children of one birth.

But all who are susceptible of pleasure from a beautiful human face, where beauty and grace may be said to have made their home, should be charmed by a well-designed architectural façade, which is beautiful on the same principle as the face, and must speak to all cultured minds irrespective of technical knowledge, no less than a picture or mass.

But there are not wanting instances of the truest appreciation of architecture among non-professional men. I forget the name of the intelligent traveller, who, longing to bear with him from the Continent a vision of beauty such as should hallow and brighten every other remembrance, speaks of the "glorious choir of Cologne as ever freshly rising from out the depths of treasured memories, as the realisation of beauty at once graceful and winning, dignified and royal." "It is difficult," he says, "to speak calmly of Cologne Cathedral, and if the fancy may anywhere float in sweetest dreams, surely it is here. Milan calms and solemnises; Cologne rejoices and elevates; Antwerp consoles and purifies." And it seems probable, from the revealings of biography, that all great poetic and artistic minds have had a love—acknowledged or unacknowledged—for architecture. Milton, who could rear mental fabrics of glory and beauty from the most varied and discordant materials, was one of its lovers. His exquisite lines in "Il Penseroso" on ecclesiastical architecture in connexion with ecclesiastical music, breathe the most intense love for it:—

> "But let my due feet never fail
> To walk the studious cloister's pale,
> And love the high embowèd roof,
> With antique pillars massy proof,
> And storied windows richly dight,
> Casting a dim religious light:
> There let the pealing organ blow
> To the full-voiced choir below,
> In service high and anthems clear,
> As may with sweetness, through mine ear
> Dissolve me into ecstasies,
> And bring all heaven before mine eyes."

The celebrated French writer, Lamartine, certainly appreciated architecture, for he goes into raptures over St. Peter's, at Rome, which he speaks of as clothing the idea of God in all the splendour of which it is capable. Another great poet, Goethe, had a strong love for, and critical knowledge of, architecture, as had, also, more or less, Horace Walpole, the Earl of Burlington, Gray the poet, Lord Byron, and Madame de Staël; while Michelangelo and Raffaelle did not disdain to practise it. It enters into the composition of the greatest landscapes and historic pictures, and is wove into the texture of the greatest epic and other poems and romances; and there is scarcely any poet or writer of fiction but what lays it under contribution. In the "Odyssey," for example, we find the palace and gardens of Alcinous, and the grotto and garden of Calypso:—

> "A scene where if a god should cast his sight,
> A god might gaze and wander with delight."

In the "Iliad" are the palaces of Priam and his sons, Hector and Paris. In the "Jerusalem

Delivered" we have the Enchanted Palace and Garden of Armida. In the "Pilgrim's Progress," the House Beautiful. In the Fairy Queen," the Bower of Bliss. In the "Paradise Lost" we find the Pandemonium, the palace or capitol of Satan, the Celestial Gate, with frontispiece of diamond and gold; the Sea of Jasper, or of liquid pearl; also the Shady Bower, flowers of all hue, and without thorn, the rose, of Paradise. In Thompson's "Castle of Indolence the Enchanted Mansion so called.

We should wonder why, in the appointments of the Muses to their various presidencies over the fine arts and liberal sciences among the ancient poets, architecture was not graced with a muse, if painting and sculpture were not in the same predicament. But all three were surely worthy of the distinction. Terpsichore would surely have been better employed with a different name, presiding over painting, sculpture, and architecture, than over dancing. They received some amends in being placed under the protection of Minerva, the goddess of Wisdom, which may serve to indicate the intellectual character of the arts; and also in the fact that Apollo, to whom the Muses were attendant nymphs, was the god of all the fine and liberal arts, including eloquence and medicine.

My impression is, that the extension of architectural study is one of the wants of the age, and essential to the true interest and honour of architecture and its professors; and there is every facility for it. Architecture may be studied as we go about our daily business. Like wisdom, she lifts up her voice in the gates and streets of the city. A man may be deprived of painting and sculpture, and be without music, but he can scarcely—if he live in a town—be without architecture. We occasionally see a picture and sculpture gallery, and museums of natural history and antiquities, but we live, for the most part, in an architectural museum, and one to which new works are constantly being added. An ancient city is to architecture what a library is to literature, and most large cities present facilities so great that names of styles and features of buildings ought to become as familiar in people's ears as household words; and most people should be able to distinguish between orders and periods as they do between trees, or between cows and sheep.

In accordance with these views, I have often thought that architectural journals should be less exclusively technical than they are, and show an aim at rendering themselves attractive to general readers. While not abating one jot of its interest for the architect, I think any architectural journal could be of such texture and complexion, that each number of it would find its way into every hole and corner of educated society; as by having some portion of its space occupied by articles interweaving artistic criticism with moral and philosophical sentiment and reflection; and by such popular subjects as the relations of architecture to the other fine arts, the relations of the latter to each other and to literature and all science: a most fascinating field of speculation, from the cultivation of which every class of students might reap benefit, and none more, I believe, than the literary man, who would find that it is in poetry, painting, sculpture, architecture, and music that those great principles which govern all the higher branches of literature are most distinctly illustrated. I believe that between all journals the same relations and sympathies should be maintained as exist between the different branches of art, literature, or science they represent. They should, as it were, blend and run into each other. [I trust this paragraph will be taken only for what it is meant,—a suggestion.]

The extension of architectural study which I recommend, so far from making every man his own architect, which some might possibly dread from it, would, I believe, cause the architect's service to be more sought after; and so beneficially influence, not only our street architecture, but the mansion and villa architecture of the country, and its harmonious application to the landscape. It would lead to greater tenderness towards our beautiful English scenery, and to great love of country and home, to which I believe there is a natural predisposition in every virtuous breast. Round the architectural scene of the joys and sorrows of our life,—

> "With tendrils strong as flesh and blood
> Our pastime and our happiness will grow."

But, what is better than all, the general study of architecture would be another instrument of the elevation and spiritualisation of society,—for helping to counteract the present tendency of men to sink into a material epicurean life; and its influence would extend to the humblest class; for, though I have only spoken of our art as appealing to the sympathies of the educated classes, I believe that every true piece of architecture, as well as every beautiful natural object, claims some sympathy in the breast of the poorest man and woman that walk the streets.

COST OF RAILWAY TRAFFIC.

SIR,—With reference to the main point now at issue between Mr. Price Williams and myself (*vide supra*, p. 105), which is as to the proportionate damage done to the permanent way of railways by heavy and by fast traffic, will you allow me to refer to a discussion which took place at the Institution of Civil Engineers on 17th April, 1855, and which bears on the very point of the cost of maintenance of the Great Northern Railway? An account of it will be found in volume xiv. of the Minutes of Proceedings of the Institution of Civil Engineers.

Mr. Robert Stephenson, V.P., M.P., then said "It was not the income per mile that should be taken as the standard of the traffic, in respect to wear and tear; it was the weight, or rather the number of wheels, combined with the weight. Coals, which were carried at a half-penny per ton per mile, would ensure more destruction to the permanent way than passengers at twopence per mile." I was in no doubt as to what would have been the reply of my old chief if the question could have been put to him; but I was not till now aware how distinctly he had expressed his opinion at the Institution. In Mr. F. S. Williams's book "The Midland Railway," p. 439, will be found the statement that when, during Mr. Stephenson's absence in Egypt, the Clay Cross Colliery Company obtained an agreement with the London and North-Western Railway Company, to carry 60,000 tons of coal to London at the rate of ¼d. per ton per mile, Mr. Stephenson refused to give his sanction to the agreement "on the ground that such a rate of carriage would be injurious to the railway company; and he would not, he said, consent to sacrifice the interests of the company, of which he was the consulting engineer, and, as he considered it, his own honour, for his private interest as a Clay Cross proprietor."

In the discussion which I have cited, Mr. Carr proffered the following statement as to maintenance of way. "He had kept a distinct account, for twelve months, of the cost of eighteen miles of the up and down lines of the Great Northern Railway, and the result showed that the permanent way expenses increased rather more rapidly than the tonnage which passed over it. The labour of maintenance of the up-line was to the down as 1·98 to 1, the gross weight passed over the rails being as 1·74 to 1. The great difference in the traffic on the two lines was due to the coals carried up towards London; and, as might be supposed, more damage was done per ton by such extreme loads than by ordinary goods and passenger trains; this would account for the deterioration increasing more rapidly than the tonnage. . . . . If railway companies would boldly meet the question of maintenance, without fear of the consequences to the value of shares in the market, a much more healthy state would be induced; and the resident engineers, having the charge of maintenance of way, would be free to compare notes, and could establish some general rule for companies, which, it was to be feared, would not now be done without injury to him who told the whole truth. . . . . The destruction of rails is in about the same proportion as the labour; the rails destroyed on the up line being to those on the down as 2 to 1. Perhaps little inference could be drawn from this, as none but defective rails would fail in three years. However, the fact was that the heavy traffic on the up-line seemed to tell upon the defective rails about as fast again as the ordinary goods and passenger traffic on the down-line."

It will be seen, then, that the highest professional authority on the subject of railways has given, by anticipation, his adhesion to the view which I have ventured to advocate, to the effect that the damage done to the permanent way is due to the weight passed over it. That when this weight is excessive, as is often the case with mineral trains, the effect of the strain on the driving-wheels, as well as that of the running friction, will proportionately increase, as intimated by the statistics of the case, is quite consistent with all that we know of the effect of stress. That is a point which I have not brought forward, although it has not escaped my attention. But the great fallacy with which I have had to contend has been the imaginary unit of the "speed ton," or the multiple of the weight by the speed. I am not aware to whom the invention of this most unfortunate expression is due; nor have I ever seen any attempt at logical argument, either from mechanical law or from statistical accounts in its support. On many of the American lines it is employed as the formula for the distribution of all working cost between passenger and non-passenger traffic; and to that fact may be attributed the bankruptcy of the American coal lines, and the small net results derived from an enormous traffic over lines so much less costly than our own. The mischief, of course, arises from the disproportionate rates of fares and of freights which have been generally established in accordance with such an erroneous division of working cost; the American lines being as far from the English lines, in the matter of comparative lowness of freight (with the exception of minerals), as the English lines, in their turn, are from the cheaply and lucratively worked lines of India.

The general use of the "train-mile" is only a veiled form of the "speed-ton." I rejoice to see that Mr. Price Williams has abandoned this method of distribution of cost, except with regard to the single item of maintenance. As to that, when what I have above cited as to the opinion of Mr. Robert Stephenson is added to the undeniable fact that the proportion of the cost of maintenance to income increases with, and much more rapidly than, the proportion of gross revenue derived from mineral traffic, I have every hope that this patient analyst will reconsider an assumption which it is impossible to reconcile with the outcome of experience.

Mr. Carr's remarks, no less than those of Mr. Stephenson, show that it is now nearly a quarter of a century since thoughtful engineers were anxious to obtain those data for determining the cost of various kinds of railway transport for which I ask, but which the companies refuse to allow even their own officers to collect. So long as the actual ton-mileage is unknown, it is impossible to do more than guess at detailed cost. We can only draw our inferences from the decrease in the net-earning power of one set of lines, contracted with the increase of the net-earning power of another, a fact more and more clear each successive half-year.

FRANCIS R. CONDER, C.E.

THE GROSVENOR *BUFFET*.

THE *buffet* attached to the Grosvenor Gallery has been decorated at a considerable expense in the fashion which has been set at the various establishments of the same kind belonging to Messrs. Spiers & Pond, described in these columns on various occasions. The "art-tiles" of Messrs. W. B. Simpson & Sons, of St. Martin's-lane, have been utilised for decorating the walls, and in the hands of the same firm the ornamentation of the ceilings was also placed. In contradistinction to encaustic, majolica, and other tiles, which are produced by mechanical processes, those of Messrs. Simpson & Sons are painted by hand. The designs are also done under glaze, and in many instances their effect is heightened by subsequent enamel paintings. The designs with which the makers have ornamented the walls of the Grosvenor Gallery *buffet* are undeniably the best they have produced. They are tile-paintings of a high order of excellence, and their size, which is more than ordinarily large, renders them sufficiently striking to attract considerably more than a mere transient inspection. The scenes depicted are in harmony with the uses and associations of the room. They represent the gambols of Amorini and Bacchanti, who are discharging various duties in connexion with a species of arcadian gathering and preparation of the vine, and take the form of large panels alternating with majolica pilasters in high relief. As a material suitable for ceilings, equally susceptible of ornamentation with ceramic ware, equally washable and imperishable, and as soft and malleable as kalsomine or canvas, Messrs. Simpson have adopted enamelled iron, now used for the first time, in the Grosvenor Gallery. The adaptation of metal for enamelled paintings was recognised by the early Limoges artists, whose works are to a certain extent copied here, being in monochrome, and covered with an opaque enamel

upon which the designs are painted. In modern times, enamelled iron has been used under the patent of Dr. Hickling, which was taken out in 1799, and various others sealed during the last thirty years for the purpose of coating vessels for domestic use. In addition to durability, enamelled iron has the advantages of being very light, and producible in pieces of almost any size. The enamelled iron plates are affixed to an ordinary boarded ceiling, and the joints are concealed and protected by means of wood mouldings. The works have been carried out under the direction of Mr. W. T. Sams, the architect of the building, and the result is creditable to all the parties concerned. The cost, we understand, was about 1,300*l*.

METROPOLITAN FREE HOSPITAL COMPETITION.

The Committee have selected for execution the design submitted by Messrs. H. H. Collins & James Edmeston, architects, submitted under the motto "Ad Rem." Mr. Edward I'Anson acted as the committee's referee, and they adopted his selection unanimously. The amount to be expended is 18,000*l*. The descriptive particulars which accompany the selected design show a full grasp of the subject. We print two paragraphs from it:—

"Economy of administration and facility of service are only obtainable by simplicity of plan, so necessary to the well-being of a hospital. Eminent authorities agree that 'complication interferes with light and ventilation, discipline, facility of supervision, and economy of service. Publicity is the best policy and most efficient protection, whether in the hospital or in town construction;' for it must be remembered that the attendants require as much supervision as the patients. A place for lumber means the accumulation of lumber, and every additional room means increased service and cleansing. In the design submitted, each floor is arranged departmentally: thus we have the official portion,—the out-patients', with the accommodation appertaining thereto, so devised that the system is progressive,—entering, receiving advice, obtaining medical relief, and departing. The hospital accommodation proper,—each floor devoted to its own purpose,—with as little corridor space as possible, and this without twists or winds, and approached by a wide and well-lighted staircase, or by a lift so positioned as to be in immediate proximity with the wards, each ward supervised by nurse, and, where practicable, by one nurse for two wards.

Culinary arrangements, whether positioned on basement or upper floors, with lifts so located that the effluvia therefrom will not penetrate into the wards. Stores of various kinds are provided (too many cannot be planned), and all under immediate charge of the matron, whose apartments are centrally situated. Laundry arrangements are, again, kept separate and distinct. The "post-mortem" and mortuary are so positioned that the dead may be removed without notice by the living, and without affecting the sensitiveness of the patients. The medical officers have facile access to their work, and are also in easy communication with the domestic staff. The operating-theatre is placed, as desired, at the top of the establishment, is approached either by the staircase or by the lift, so that the patient is landed at its door without being subjected to exertion or fatigue; and if a small clinical school be desired, the recess can be appropriated for a gallery to accommodate students or visitors."

It may be mentioned that the competition was limited to six architects; namely, Mr. Chas. Barry, Mr. Chatfeild Clarke, Mr. H. H. Collins, Mr. J. Edmeston, Mr. Owen, and Mr. Ebenezer Saunders. By a singular coincidence the design selected for the Second Premium was one by Messrs. Edmeston & Collins.

"Costless Power."—One of the latest dodges in the matter of electric lighting we take from *Design and Work*. A Mr. James Tyman states that by using the hind wheel of his bicycle as a motor for the magneto-electric machine, and having the carbons, with necessary adjustment, fixed on the front of his bicycle, he obtains a light equal to 120-candle power. The cost of the apparatus is about 5*l*., and the only drawback to this invention is that directly the rider stops he is left in total darkness.

NORTHERN ARCHITECTURAL ASSOCIATION.

A special meeting of the members of the Northern Architectural Association was held on Thursday, the 23rd ult., at the Old Castle, Newcastle, for the purpose of presenting Mr. Robert Lamb, one of their members, with an illuminated address, bearing testimony to their estimation of his character and qualifications, prior to his leaving Darlington for New Zealand for the benefit of his health. The president, Mr. Thomas Oliver, occupied the chair, and he was supported by Mr. S. Oswald, Mr. Prosser, Mr. W. H. Dunn, Mr. F. Charlton, Mr. Shewbrooks, Mr. Reay, Mr. Connell, and others, together with the subject of the address, Mr. Robert Lamb, of the firm of Messrs. Ross & Lamb, Darlington. The president rose to present the address, together with a purse of gold, and addressed Mr. Lamb as follows:—"My dear sir,—As the president of the Northern Architectural Association, it is my duty to present you, in the name of the members of that association, with this address, and a purse containing the surplus subscriptions, on your proposed removal from amongst us, owing to ill-health, to seek in New Zealand a more congenial climate for the prosecution of your duties and your profession. We all regret that you must leave us, and we fervently hope you may have health and strength in your new home. No one here can part with you as I do. You are associated in all my youthful endeavours, as my first pupil, assistant, and partner. With years you have increased in my esteem, and my admiration of your unobtrusive goodness has also increased with them. Your talents are appreciated by all who know you; and your high sense of honour, your keen feeling in regard to professional etiquette, your inborn love of truth and justice, and your gentle though firm behaviour throughout the routine walks of life, impress themselves upon those who know you, as I am sure they have impressed themselves upon me. I congratulate you on being what I may call one of those "handy" men,—a man who can do anything, indeed; for it is just such men, I can imagine, that are adapted for new countries. I am a regular reader of Australian newspapers, and letters from Australia, so that I have a pretty good idea of the doings of a new country; and I can vouch for this, that you will adapt yourself in your domestic habits as well as in your professional duties to the ways of a new people as well, or better, than any one I know. I wish you good health to do this. I expect you will take to your newly-adopted country this memorial of our respect, esteem, and regard; and as its beautiful lettering is perused by strangers, you will feel proud in saying that your name,—though then quite a young man,—is one of the foremost enrolled in the list of the first members of the Northern Architectural Association, just twenty-one years ago. On this, the year of our majority, we, as an association, wish you,—though a sad farewell,—a hearty God-speed." With considerable emotion Mr. Lamb briefly expressed his thanks for the address.

NATIONAL ASSOCIATION OF MASTER BUILDERS.

The first annual meeting of this Association was held on the 23rd ult., in Leeds, when upwards of seventy representatives from the local associations of Altrincham, Birmingham, Bolton, Bradford, Bristol, Crewe, Derby, Doncaster, Huddersfield, Hull, Lancaster, Leeds, Leicester, Lincoln, Liverpool, London, Manchester, and Salford, Newcastle-on-Tyne, Nottingham, Southport, St. Helen's, Walsall, Warrington, Widnes, Wigan, and Wolverhampton were present. The report of the council announced a very general reduction of the rates of wages, and in some cases an increase of working-hours in the various branches of the building trade as likely to come into operation at various periods during the coming spring. The meeting also discussed and approved a form of contract which had been prepared and recommended by the council for general adoption throughout the building trade in the country, the contract being based upon the conditions of contract agreed upon by the Royal Institute of British Architects and the London Builders' Association. The National Association now embraces the Local Builders' Associations of nearly all the principal towns and cities in the country, and the council are still assisting in organising new associations in towns where none exist, with a view to their amalgamation with the National Association. A very strong opinion was expressed at the meeting that the proposed reduction in the cost of labour will lead to a general improvement in trade, and thus benefit both workmen, employers, and the public.

STEAM LAUNDRIES.

Sir,—In the interesting paper by Mr. Street upon the above subject read at the late meeting of the Civil and Mechanical Engineers' Society, and given in the *Builder* of the 25th ult., I miss all allusion to the very important consideration, as regards the *thorough cleansing and purification* of the articles to be washed, of the qualities of the waters suitable and unsuitable for the purpose.

This question is one to which my attention has been drawn lately by more than one steam laundry company, and I have had to deal with it by their invitation; but it is extraordinary how little consideration is ordinarily given to it even in its economical bearings upon this industry, whether pursued upon a large or a small scale.

It may be well worthy of a little space in your valued columns, I venture to think, to give an extract or two from the Report of the Royal Commission* upon "The Domestic Water Supply of Great Britain," and the more so that it is not now easily to be obtained upon this point.

At page 21,—"Hard water decomposes soap, and cannot be efficiently used for washing. The chief hardening ingredients met with in potable waters are the salts of lime and magnesia. In the decomposition of soap these salts form curdy and insoluble compounds, containing the fatty acids of the soap and the lime and magnesia of the salts. So long as this decomposition goes on, the soap is useless as a detergent, and it is only after all the lime and magnesia salts have been decomposed at the expense of the soap that the latter begins to exert a useful effect. As soon as this is the case, however, the slightest further addition of soap produces a lather when the water is agitated, but this lather is again destroyed by the addition of a further quantity of the hard water." . . . . "The operation of washing with soap and hard water is analogous to that used by the dyer and calico-printer when he fixes his pigments in calico, woollen, or silk tissues. The pores of the skin are filled with insoluble greasy and curdy salts of the fatty acids contained in the soap, and it is only because the insoluble pigment produced is white, or nearly so, that such a repulsive operation is tolerated. To those, however, who have been accustomed to wash in soft water, the abnormal condition of the skin thus induced is for a long time extremely unpleasant."

Of the hardening salts present in potable water, carbonate of lime is the one most generally met with; and, to obtain a numerical expression for this quality of hardness, a sample containing 1 lb. of carbonate of lime, or its equivalent in other hardening salts, in 100,000 lb., is said to have one degree of hardness. Each degree of hardness indicates the destruction and waste of 12 lb. of the best hard soap by 100,000 lb., or 10,000 gallons, of the water when used in washing. Or (page 204), "Thus 10 gallons of water of the hardness of Thames water (about 20 degrees) cause the waste of nearly a quarter of a pound of a soap when it is used for washing."

"They estimate that the maximum loss of soap incurred by the use of Thames water is 43 per cent. for linens, and 14 per cent. for woollens; but they call attention to the fact that in the coarse washing of the poorer classes much of this loss may be avoided by the use of carbonate of soda. It is in the more careful washing of the middle and upper classes that the advantages of soft water become fully sensible. In the digestion of the linen in hot water with soap and carbonate of soda, preliminary to the proper washing, the hardness of the water can only occasion a trifling loss of soda; but, afterwards, in the wash-tub where soda is avoided, the earthy salts must occasion a loss of their full equivalent of soap. It is found proper also to avoid boiling any portion of the Thames water that is used in the wash-tub, or even heating that water above a certain point, for the carbonate of lime precipitates on the linen, carrying down the colouring matter of the water with it, and producing stains which there is the greatest difficulty in afterwards removing from the linen. The colour from the water is thus, indeed, fixed upon the cloth by the precipitated lime with the tenacity of a mordant" (pp. 238, 239).

In the washing of the person, the saving of soap by the use of soft water is most obvious. For baths, soft water is most agreeable, and might contribute greatly to their more general use. Its superior efficiency to hard water in washing floors and walls is calculated also to promote a greater cleanliness in the dwellings of all classes, both within doors and externally; while in the occasional domestic washing of linen, the smaller preparation necessary for washing in soft compared with hard water, the saving of soap which would then be sensible to its full extent, and the more easy and agreeable nature of the operation, would

* Rivers Pollution Commission. Sixth Report. 1874.

make a supply of soft water in a high degree desirable. The use of soda in washing would be gladly avoided by most housekeepers, owing to its injurious action on the colours of certain prints and the permanent yellow tinge and weakness of fibre which it may occasion, even in white linens, when exposed to heat, before the soda is entirely washed out, as in ironing.

"The economy which carbonate of soda exhibits in comparison with soap as a softening agent is far surpassed by that which results from the use of lime for this purpose. The latter material costs only about 8d. per cwt., and this weight of lime will do the work of 20½ cwt. of soap in softening hard water. To soften a quantity of hard water which requires 1 cwt. of lime, the following would be the weight and cost of the three alternative materials:—

1 cwt. quicklime	£0	0	8
4¼ cwt. carbonate of soda	2	17	9
20½ cwt. soap	47	1	8

There is thus an enormous economy in the use of lime, and in the discovery of this process the late Dr. Clark, Professor of Chemistry in the University of Aberdeen, conferred a valuable boon upon the inhabitants of many hard-water districts," (p. 205).

There remains to add that this process of Dr. Clark is fully described in your own pages of the 15th of December, 1877.

JOHN HENDERSON PORTER.

LARGE PURCHASE OF LAND BY THE METROPOLITAN ASYLUMS BOARD.

THE Metropolitan Asylums Board have just determined to purchase between fifty and sixty acres of land near the Darenth schools, at a cost of 109*l.* per acre. At their last meeting, the subject was before the Board, when Sir E. H. Currie, as chairman of the Darenth Schools Committee, stated that the land was valuable, and that its possession by the managers was not only exceedingly desirable, but as a matter of future economy was of great importance. The land in the first instance was offered at from 75*l.* to 80*l.* an acre, but under those terms they would have had to deal with the tenants on the property, and in order to get rid of that difficulty the committee recommended that the land be purchased outright, at 109*l.* per acre. The chairman of the finance committee observed that the borrowing powers of the Board had already been exceeded, and what he wished to guard against was that, having obtained possession of this land, there should not be an immediate desire on the part of the Darenth committee to build another asylum upon it. The motion for the purchase of the land was, however, unanimously adopted.

THE LONDON FINANCIAL ASSOCIATION AND THE PURCHASE OF THE ALEXANDRA PALACE.

THE London Financial Association appear at present to be in some difficulties in connexion, amongst other things, with the purchase of the Alexandra Palace and grounds, and a special meeting of the shareholders has just been held to consider the report of a committee of investigation into the transactions of the Association antecedent to the appointment of the present Board on the 8th of April, 1878. From the report of this committee, it appeared that the paid-up capital of 1,154,700*l.*, and the reserve fund of 80,000*l.*, had all been lost. Mr. J. H. Powell, who acted as chairman of the meeting, made pointed allusion to the Alexandra Palace purchase, observing that Messrs. Galsworthy and Fletcher were appointed by the shareholders to make a report of the Alexandra Palace Company, and therefore he was prevented from taking the initiative. In next speaking of Mr. E. M. Barry, he stated that he did not wish to say one word in disparagement of him; but he would say that the previous connexion of Mr. Barry with the Messrs. Kelk & Lucas would also prevent his taking the initiative. It must be recollected that Mr. Barry was the architect for Covent Garden Theatre and a great hotel, and Messrs. Lucas were the contractors, and was it for a moment to be supposed that Mr. Barry would like to break off that connexion?—though no doubt, if some one else would stand in the matter, and place the circumstances before Mr. Barry, he would express an opinion. After some further remarks from the chairman, in the course of which he stated that there was a large sum of money of which the shareholders had been deprived, a discussion followed, ending in the committee being instructed to continue their investigation into the affairs of the company, and to present a requisition to the directors to call an extraordinary meeting.

"FROST AND THE WATER PIPES."

SIR,—In reference to a paragraph in your last issue, headed "Frost and the Water Pipes," every reader of the *Builder* may easily satisfy himself that water-pipes, &c., burst on freezing, as you say, and not at the time of thawing, as many suppose. Let any one take a common wine-bottle, fill it with water, cork it tight, and expose it in the open air during a hard frost, and he will find that on the water freezing solid the bottle will either be burst or the cork forced out. A better experiment still will be to procure 3 ft. or 4 ft. of ½ in. or 1 in. water-pipe, with an iron plug screwed in at each end; remove one of the plugs, fill the pipe with water and screw the plug securely in, expose the pipe until the water is frozen solid, and it will probably be found that the pipe is burst. A cast-iron pipe would be much better for the experiment, as its elasticity is less than that of wrought-iron. The expansive force of freezing water is about 30,000 lb. per square inch, and its maximum density is at 4 degrees centigrade.

FRANK CHESSELL.

SIR,—I have for some years observed rather closely the action of frost on water-pipes, and have come to the conclusion that it is not the expansion of cystallisation acting directly which causes the fracture.

A pipe may be frozen fifty times without breaking, and the unlucky failure happens at last when it becomes frozen in two places, and the crystallisation goes on from these places towards each other. The water pent up between the two masses of ice thus becomes subject to such a pressure that a rupture of the pipe must take place. The gaping nature of the rent caused is to my mind proof that this is the case, and so is also the fact that a pipe which is known to be frozen up for yards of its length does not split from end to end, but opens in one or more places of moderate length.

W. WYATT.

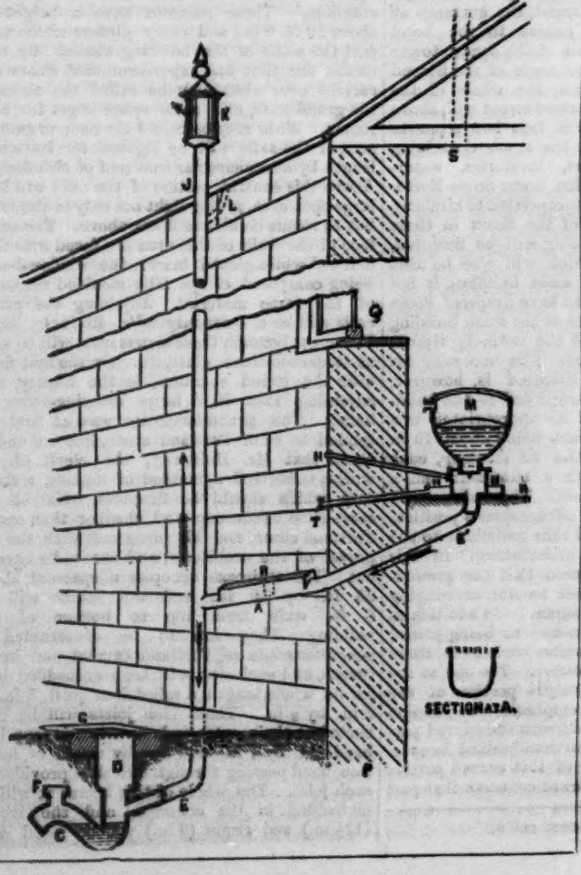
SANITARY APPLIANCES IN HOUSES WITHOUT SEWAGE GAS.

SIR,—Many attempts have been made of late years to solve this problem satisfactorily, but all plans I have yet seen published are open to improvement. In November, 1874, I published an article on "Scientific and Safe Water-closets," the safety consisting in locking off the soil-pipe from the house-drain by means of a ventilating syphon drain-trap at its foot, which allowed a current of fresh air to enter the soil-pipe, and come out at its top as diluted sewage gas. In a long soil-pipe, however, the smell at the top was pretty strong. At p. 44 of your issue for January 12, 1878, a different plan is shown by Mr. R. Norman Shaw, R.A. This plan is faulty, however, in several respects, which need not exist, viz., it allows the foul air in the upright soil-pipe to blow off under the windows instead of above them. It also omits to ventilate the soil-pipe between the water-closet and the outside, while easy access to the drain-trap is not provided for.

As meeting all these objections, I beg to enclose a new plan, which, for simplicity and efficiency, combined with cheapness, is in advance of anything I have yet seen. The idea was suggested to my mind by a perusal of Dr. Robert Bell's "Sanitary Science" in Blackie's Encyclopædia. The particular speciality in this case is the use of an open-air channel-pipe, as marked at A on the sketch, which occurs upon the branch soil-pipe. It is made upon the pipe outside of the wall, and breaks the air connexion between the upright main soil-pipe and the branch soil-pipe without interfering with the free flow outwards of the soil. The plan is *not patented*, and all and sundry are free to use it.

It is understood that the house-drain is properly trapped off from the sewer, and also ventilated. Mr. Baldwin Latham states, at p. 408 of his work on "Sanitary Engineering," that the system of drainage, ventilation, and trapping recommended in the recent Model Bye-laws issued by the Local Government Board is that shown in my patent for April, 1875, and drawn there for the information of the public. A great advance as regards safety, however, would be found in the adoption of the new plan I now suggest, which is applicable for waste-pipes as well as soil-pipes.

I have shown the water-closet without a syphon-trap under it, but such may be used if desired. M in the sketch is a Bramah valve closet, which requires a small trap for the overflow, especially if the under trap be omitted. H is the ventilating-pipe for the branch soil-pipe E', the fresh air entering at the open side of A, nearest the water-closet. T is the safe-pipe, with a hinged valve upon its outlet-end, C is a ventilating 6-in. drain-trap. D is opening both for fresh air and cleansing. The fresh air entering at D comes out at the fixed ventilator, K, above the roof. The air-current of the main soil-pipe, E, tends to induce a current from the open end of A next the soil-pipe, so that no smell from the soil-pipe comes out at A. B is a swinging valve of thin tinned copper, but I do not consider it necessary. Q is the water-closet window, and S a ventilating-pipe for the water-closet apartment if wished. It is supposed the air-channel at A may be about 2 ft. long. With its use the short piece of soil-pipe between it and the house could do almost no harm, as the pipe H would prevent any accumulation of sewage-gas in it, especially if the water-closet were properly flushed when used, and kept as a water-closet, and not as a cesspit.



Although only one water-closet is shown as joining the upright soil-pipe, several might join it, each with its own branch pipe and open channel, A; it being remembered that the shorter the branch soil-pipe between the

w.c. and A, the less sewage-gas will be generated. Consequently all water-closets and other sanitary fittings should be close to and as near an outside wall as possible.

Inattention to this has added largely to the disease and death-rate of our country for years back, and it is still going on,—more shame to the authorities who allow it to be done, and to the architects who draw the plans. So far as my experience can enable me to judge, our plan is to allow houses to be put up badly and to be badly drained; then, after several people have been killed, and a complaint lodged,—the latter is the main point,—things will be cobbled up. "Prevention of disease is better than cure" has been talked about, but it has not, so far as I am aware, been properly acted up to yet. Progress in sanitary matters is slow; it is to be hoped, however, that it will be sure.

W. P. Buchan.

THE GRAND HOTEL, CHARING-CROSS.

VISIT OF THE ARCHITECTURAL ASSOCIATION.

The members of the Architectural Association made their first Saturday afternoon visit to works in progress during the present session on the 25th ult., the building selected being the Grand Hotel, Charing-cross, by permission of the architects, Messrs. Francis & Saunders. The building, as passers-by will have observed, has now made considerable progress, having been carried up in parts beyond the fifth story. The visitors on Saturday last were numerous, and they were received in the office of the clerk of the works by Mr. Horace Francis, one of the architects, who briefly explained the plans and the leading features of the building, and the visitors were afterwards conducted over the works by Mr. Holloway, the clerk of works (whom we remember at the new East and West India Dock-house, Billiter-street), and Mr. Coates, the general foreman and representative of the contractors, Messrs. Merritt & Ashby. The building will be six stories in height, with an additional story in each of the four Mansard roofs which surmount the towers which serve to emphasise the façade. The building covers half an acre of ground, and has a total length of frontage, from the extreme point in Northumberland-street to the extreme limit in Northumberland-avenue, of 420 ft.; the distance from the Strand corner to the termination of the building in Northumberland-avenue being 302 ft. Of the 118 ft. frontage occupied in Northumberland-street, nearly the whole of the ground floor will be used as a *buffet* and *restaurant*, entered from the Strand, the entrance at this corner also giving access to the hotel proper. With the exception of the square tower which is carried up at the angle of the Strand and Northumberland-street, the whole of the building facing the last-named street will, above the ground-floor, be divided into two separate portions,—that adjoining the tower containing most of the bath-rooms, lavatories, water-closets, &c., and the portion lower down Northumberland-street being appropriated to kitchens, bakery, &c. The whole of the floors in these two portions of the building will be fireproof, on Dennett's system, which will also be used for the first floor of the main building, it not being thought necessary to have fireproof floors throughout. All the floors of the main building above the first will be of the ordinary timber construction, well pugged. The necessity for making the first floor fireproof is, however, imperative; for at the Strand end of the building the ground floor will be appropriated to a series of sixteen shops, each being about 15 ft. wide between centres, and 30 ft. deep, each shop being provided with a basement and a vault beneath the pavement. These shops will, it is expected, from their advantageous position, command good rents, and thus contribute to the financial success of the undertaking. In this connexion Mr. Francis stated that the ground-rent amounts to 9,500*l.* per annum, or, roughly speaking, 9*s.* 6*d.* per foot super.! In addition to the tower we have mentioned as being placed at the corner of Northumberland-street, there are three other similar towers. The one at the western end of the straight portion of the Strand façade serves to emphasise the junction of that part of the façade with the curved portion at the corner of Northumberland Avenue. At the lower extremity of this curved portion of the façade* a third tower connects that part of the building with the straight portion in Northumberland Avenue; at the extremity of this straight portion is the fourth tower. These towers are each about 130 ft. high from the ground-line to the iron cresting surmounting the Mansard roofs, which will be executed in Vieille Montagne zinc. The main cornice will be at the level of the fifth floor, and will have a projection of 2 ft. 6 in. At the level of the sixth floor will be a less prominent cornice, surmounted by a balustrade, behind which the slated roof, studded with numerous dormers lighting the rooms in the sixth floor, will rise. The shops on the ground story will not extend the whole distance down Northumberland Avenue, the last 60 ft. or 70 ft. of ground floor frontage being of masonry, and comprising the grand entrance to the hotel. The material used for the façade is Portland stone on the ground story. Above the ground story the façade is wholly of Box Ground (Bath) stone, specially selected by the clerk of the works. The only coloured material used in this façade will be red Aberdeen granite. Of this material are the pilasters between the several shops, and the three-quarter columns on the first floor. Bosses of the same granite will be fixed in the moulded stone pilasters at the angles of the towers. The mortar used for the internal walls is ground blue lias, the brickwork behind the façade being all set in Portland cement. At intervals in the façade there are large oriel windows extending through the first and second stories, and where these oriels happen to come over the shop-fronts the way in which the masonry has been corbelled out directly from the girders is somewhat of a feat in construction. The base of each of these windows consists of three large stones, each weighing from four to five tons, and each boxed-out, tied down by bolts behind, and seated on flanges of girders in front. The whole of the ironwork, except that used in the fireproof floors, is being supplied by Messrs. Burgoyne & Co.

The building will contain about 250 rooms,—some in suites of two, three, four, or more,—and the remainder simply bedrooms. This number of rooms is exclusive of those set apart for the domestics. On the ground-floor, to the right of the grand entrance as one enters the building, will be a large smoking-room. Approached from the hall on the left-hand will be the grand central *salle-à-manger*, 95 ft. by 50 ft. This will be a handsome apartment, divided longitudinally into what may be likened to the nave and aisles of a church by a series of eighteen iron columns, encased in marble or scagliola. These columns have a height of about 19 ft. 6 in., and carry girders which support the walls of the building above. By this means the first and superincumbent floors are carried over what may be called the aisles of the grand *salle*, and more space is got for bedrooms. What may be called the nave or central area of the *salle* will be lighted for its whole length by a semicircular iron roof of rich design. Above this central portion of the *salle* will be a large open area, giving light not only to the *salle*, but to rooms on all the floors above. The outer face of the walls of this area are faced with Cliff & Sons' white-glazed bricks, the window-heads being composed of specially-moulded voussoirs of the same material. Adjoining the grand *salle* will be a secondary *salle*, 40 ft. by 35 ft. The space beneath these apartments will be used as stores for china, glass, &c. On the first floor, over the grand entrance, is the library, and adjoining that is a large drawing-room for ladies. The grand staircase was at first intended to be of Portland stone, but we understand that Mr. Holloway, the clerk of the works, conceived a method of making a staircase which should be fireproof, while at the same time handsomer and cheaper than one of Portland stone, and his plans met with the approval of the architects, and are to be carried out. The staircase occupies a space of about 25 ft. by 19 ft., and the stairs will be 6 ft. wide from top to bottom of the building. They are to be constructed of concrete made of Portland cement and burnt breeze, and each step will have embedded in it for its whole length a rolled iron joist, 5 in. by 2 in. by ¼ in. These iron joists will be connected at their outer ends by a continuous iron bar 1¼ in. by ¼ in., and also by means of hoop-iron bond passing through two slots provided in each joist. The whole of this ironwork will be embedded in the concrete, and the treads (12½ in.) and risers (6 in.) will be faced with white Sicilian marble, the soffit being finished with Parian cement in moulded panels.

We have only space to add that the present contract, amounting to 90,000*l.*, is expected to be completed by Jan. 1, 1880. This contract, however, does not include decorations and many other items.

* Struck on a 60 ft. radius.

PROTECTION FROM FIRE.

Sir,—The destruction by fire of the mansion, Duncombe Park, including so many priceless gems of art, ancestral portraits, &c., is truly a national calamity! Unfortunately, such an occurrence is by no means rare.

For the protection of noblemen's country residences, I take it for granted that most of them have one or more fire-engines on the premises, but a fire-engine is a mockery if the water supply fails (too often the case when a fire of any magnitude occurs), and hence the necessity for a special cistern of sufficient magnitude for all possible contingencies; and as there are but few country mansions of any importance without a lake or large pond in their vicinity, sanitary pipes might be laid, if the level permitted, in connexion with the cistern.

The use of iron is fast superseding wood, and might be largely used in the construction of country mansions. *Certes*, when a fire breaks out, the less wood they have about them the better. The floors might be of iron, similar to the decks of some of our large steamers, *i.e.*, of embossed plates, about ¼ in. thick, coated with Portland cement on the top side, and laid upon iron beams (specially rolled for the purpose).

Sir William Burnett patented a process a few years ago, for rendering wood impervious to the ordinary action of fire (by treating it with a certain chemical solution, presuming it answered fairly well; wood so prepared might be used for the necessary internal fittings, and so the liability of a house, or rather the movable furniture of a house, to destruction by fire would be well-nigh reduced to a minimum.

With regard to heating apparatus, the hot-water system is decidedly preferable to, and infinitely safer than, the flue or hot-air system.

How frequently a fire originates under the hearthstone, due to the slab being too thin, and set upon wooden sleepers, and perchance a roaring fire kept up in a low grate until the inmates of the house retire to rest.

For extinguishing a fire in the early stage, the "*Extincteur*" (a small portable appliance), has already done good service, but is not so well known or appreciated as it deserves. It has, however, been adopted by several of the large hotels in London, at the South Kensington Museum, and on shipboard. To it Mr. Brassey, M.P., was greatly indebted for subduing a fire which broke out in the night on board his yacht the *Sunbeam*, during his recent voyage round the world.

H. S. Harland.

VENTILATION OF CHURCHES.

Sir,—I think it will be admitted that no hard-and-fast lines can be laid down for the proper ventilation of churches: very much must necessarily depend upon the conditions already existing, and the ease or otherwise with which they can be altered. A dome or lantern light will facilitate the object very materially, with other proper arrangements; and with these latter I find down-draught can be reduced to a minimum. In winter ventilation alone will not prove satisfactory. Churches require to be warmed properly then also. If the heated air has to *fight its way* from a furnace through long, cold channels, having gratings in them at *various points for the purpose of admitting* the heated air into the body of the church, the temperature at different parts of it will be very unequal, because proper diffusion throughout the entire space, if unassisted, will certainly be found not to take place sufficiently quickly to be either useful or satisfactory. Mere *channels* for the *admission* of fresh and warmed air, and others for the *escape* of vitiated air, will also, I am satisfied, prove abortive unless some *real* means of "extraction," on either the *plenum* or *vacuum* plan, or both combined, be used. It must be borne in mind, too, that the moment a valve in a shaft is used to "shut off" air, ventilation through such a shaft ceases. I have warmed and ventilated some churches and large public buildings very satisfactorily. As my plan of doing it is known to you, I need not now attempt, by a long description of it, to fully explain it. As special certificates of the efficiency of anything can, we are told, be obtained on payment of a fee of five guineas, it would be useless for me to send you any. The injured honour of real science cries aloud at this; will her wounds ever close?

E. Gregson Banner.

The "Separate System."—The committee of the Lower Thames Valley Main Sewerage Board have, very judiciously, sent out a circular letter to all the sanitary authorities of which the Board is composed, asking for their opinion as to the adoption of the "separate system" in their future drainage operations.

MASTERS AND MEN.

Sheffield.—A meeting of the Sheffield carpenters and joiners was held on the 22nd ult. to consider the new code of rules recently issued by the masters, in which they propose a reduction of 1d. per hour, and an addition of four hours to the working week, as well as the abolition of all the privileges in the rules agreed to in 1877, except the one which makes the hours for outdoor work the same as those observed in the workshops. The meeting, after discussion, decided that it was premature to discuss the proposed set of new rules, and the meeting was adjourned to a future date.——At a meeting of the Executive Distress Committee, held on the 20th ult. at the Town Clerk's office, the following instructions were issued to the chairmen and members of the district relief committees:—"*No bricklayer, mason, joiner, or other person engaged in those trades which are now on strike,* or any person or family keeping a dog, must be relieved out of the Mayor's Relief Fund."

Barnard Castle.—The lead trade in Teesdale shows no sign of reviving. In addition to the number of men already discharged by the agents of the London Lead Company, it is stated in the upper part of the dale that the mining agents have been instructed to discharge about one hundred more miners. Acting on the instructions of the governor and company, it is understood that the necessary notices have been issued, and that they will take effect at the usual letting of the bargains in the course of a week or two.

Forfar.—The master builders in Forfar have reduced the wages of their journeymen to 6d. per hour, the reduction to take effect immediately.

Miscellanea.

St. Mary-at-Hill, Eastcheap.—This church having been threatened with destruction or injury, by being scheduled by the Inner Circle Railway completion scheme, a meeting has been held to take steps to prevent the proposed Vandalism. Mr. W. M. Teulon, architect, presided, and said he was glad to find that there was now some probability of a vigorous opposition to any interference with the church. When the Sion College scheme was first broached, the architects had been startled by its Vandalism, and had formed a sub-committee among themselves, which had visited every one of the doomed churches, some thirty in number, but he regretted that no practical action had resulted from their visit or their meetings. He had for a long time felt that a committee must be brought together in the City of London if these churches were to be saved from destruction. It might be allowed that the Union of Benefices Act had gone far enough, as eleven churches had already been removed. A general discussion ensued, and it was eventually decided that there should be mutual co-operation and communication on the subject, and those present formed themselves into a preliminary committee to establish a "City Church and Churchyard Protection Society."

Schools of Art.—Sir P. Cunliffe Owen, C.B., director of the South Kensington Museum, delivered the prizes to the successful students at the Nottingham School of Art in the Albert Hall of that town. In the course of his remarks he said that while acting as secretary to the English Commission at the Paris Exhibition, he had opportunities of witnessing the practical results of the schools of art. As an Englishman he had reason to be proud of the position this country had taken during that Exhibition. He had been pleased to hear the French acknowledge that we had obtained, through the agency of the schools, a style of our own, and that they were willing to come to this country for designers for their manufactures.

The Hampstead Small-Pox Hospital.—Judgment was given on Tuesday in the case of Hill and Others *v.* The Metropolitan Asylums Board. This action was brought by Sir Rowland Hill and other inhabitants of Hampstead against the Metropolitan Asylums Board for injuries alleged to have been caused to property and to the sanitary condition of the neighbourhood through the establishment of a small-pox hospital at Hampstead Heath. Baron Pollock, in delivering judgment, found for the plaintiffs on all points, granting an injunction to restrain the defendants from carrying on the hospital so as to create a nuisance.

Fires.—The residence of Sir F. Leighton, president of the Royal Academy, 2, Holland-park-road, Kensington, was the scene of great confusion on Tuesday morning, consequent on the alarm of fire, occasioned by a defect in the flue. The fire was extinguished by the inmates. Some damage was done by fire and cutting away in the vicinity of the studio, the contents of which suffered from the effects of smoke and dirt.——Between ten and eleven o'clock, a fire occurred at 10, Eagle-wharf-road, New North-road, occupied by Mr. H. Pritchard, cabinet-maker, the circumstances attending which were most unfortunate. After the "call" was made, the turncock was not present for nearly an hour, and on the arrival of the brigade from the Essex-road, Islington, much time was lost, owing to the frost, in opening the plugs. In the meantime, the steamer from Whitecross-street broke down in Shepherdess-walk, and was unable to reach the fire.——Kenmare Castle, which is in course of construction at Killarney, for the Earl of Kenmare, has had a narrow escape of being burned down. The main building has been completed, and the workmen are engaged in the internal decorations. On Saturday morning, when the men were going to work, they discovered that a fire had broken out in the butler's pantry, at the northern side. This apartment had been filled with joinery and timber, which fed the flames, and quickly caused it to extend. The fire had already taken possession of the upper flooring, and was extending to the kitchen-roof and across the corridor to the billiard-room, which was filled with a lot of valuable timber. It had also taken possession of the staircase, and was rushing up the left to the upper rooms. Fortunately the water supply to the house had been completed, and hydrants had been fitted both outside and inside the house. After an hour the workmen succeeded in isolating, and finally in subduing, the flames. The damage, which is estimated at 2,000*l.*, is covered by insurance.——On Monday evening, about nine o'clock, a fire occurred in one of the old Government buildings in Downing-street. It broke out in that portion of the Colonial Office now occupied by a branch department of the Board of Trade, detached from the head office. Considerable damage has been done to the building, but the official residences of the Premier and the Chancellor of the Exchequer were uninjured.

Royal Irish Academy.—At a general meeting of the Royal Irish Academy, Dublin, on Monday evening, Dr. Fraser said that two years ago he had called attention to the unprotected state of the manuscripts in the Academy. A terrible fire had recently occurred in Birmingham, and a large number of exceedingly valuable works and manuscripts were destroyed. Now, it seemed to him that in a library the only and best plan was that adopted by merchants, and it was to deposit the manuscripts in a closed safe after the day's use. He now again called attention to it, and hoped that some steps would be taken for the protection of the manuscripts. The chairman (Sir Robert Kane) said that the discussion was not quite formal, as no notice had been given; the best thing to do would be to refer the matter to the council for consideration. Dr. Fraser then moved a resolution to that effect.

The late Mr. John Johnson, Architect.—This gentleman, who died on the 28th ult., and of whose works as an architect we have already spoken, was celebrated as a fisherman. His skill in this respect is thus noticed in the *Fishing Gazette*:—"In the piscatorial world Mr. Johnson has left behind him the name of a famous angler, and the books of the Piscatorial Society, of which he was a very old member, record some wonderful takes of fish in the earlier portion of his life. In the year 1866 he obtained the leading prize for the greatest weight of fish, there being a total of something like 550 lb. placed to his credit. He was also, up to the time of his death, 'the author' of the club in conjunction with his old friend, Mr. Thomas Gillatt. Mr. Johnson was an old member of the Thames Angling Preservation Society, and for the last ten years was one of its general committee."

Municipal Buildings, Reading.—The Reading Town Councillors, at a special meeting held on the 20th ult., passed a resolution that a proposal for the ratepayers to contribute 10,000*l.* towards the sum of 45,000*l.*, to be raised for the building of a new Town-hall, free library, museum, and schools of science and art, be submitted to the ratepayers in public meeting.

Well-walk, Hampstead.—We are glad t see it stated that in all probability the venerabl lime-trees of which this walk is composed, and which are connected with the memories of Dr. Johnson, Charles Lamb, S. T. Coleridge, and John Keats, will be spared. The trustees of the Wells Charity, who towards the close of last years had passed sentence of execution upon them, have now rescinded their resolution, having been moved thereto by an almost unanimous memorial from the parishioners and residents of Hampstead. As, however, the intended destruction of Well-walk had been sanctioned by the Charity Commissioners and their surveyor, it will be necessary to submit the altered plan of operations to that Board for their approval before the Walk can be said to have been permanently saved.

New Business Premises, Londonderry.—New business premises for Messrs. Mulholland & Co., in Bishop-street and Pump-street, Derry, have just been completed, from the plans and under the superintendence of Mr. John Guy Ferguson, architect. Messrs. Salmon, Barnes, & Co., supplied the revolving-shutters; Messrs. Defries & Sons the sun-burners; Howorth's archimedian ventilators are used; and the heating is effected on Messrs. Musgrave's patent "warmed fresh air" system. All the plumbing, lighting, and gasfitting arrangements have been carried out by Messrs. McLaughlin & McCullough; the ornamental plaster-work was executed by Mr. Creery; and the cast-iron work was supplied by Messrs. Geo. Smith & Co., Glasgow. The general contractor was Mr. Joseph Ballintine.

Yardley (Birmingham) Sewerage Works.—A meeting of the Solihull Rural Sanitary Authority was held on the 22nd ult. at Solihull, the Rev. J. Howe presiding. On the motion of Mr. Barrows, seconded by the Rev. F. S. Dodd, it was resolved that the cost of the structural works at Cole Hall and Acock's-green, and the additional sewerage required in Yardley Village, as recommended by Mr. E. Pritchard, engineer to the Authority, form part of the application to the Local Government Board for 20,000*l.*, and that no new contract for works be entered into until the present contract is completed. The amount already borrowed for works is 25,000*l.*

Tooth's Improved Railway Bars.—On the 23rd ult., a number of gentlemen interested in railway improvements visited Stratford, to witness the working on the Great Eastern goods sidings, of a new system of railway bars, patented by Mr. Tooth. The system has been in operation for three weeks at Stratford. Amongst the advantages claimed are,—prevention of concussion, the bars being made to overlap, and so enabling the wheels of the engine and carriages to get on to one bar before leaving the other; reduction of noise, and oscillation; and great saving in wear and tear of rolling stock, and in maintenance of permanent way.

The Revival of Trade.—Mr. Mundella, speaking at the annual meeting of the Sheffield Chamber of Commerce, expressed a belief that, notwithstanding the present gloomy outlook, we had not permanently lost any portion of our national industries, and said he was convinced trade would revive. The reciprocity which was most required was that between capital and labour, which would induce more mutual consideration between employer and employed.

Wedgwood Ware at the Liverpool Art Club.—An exhibition of Wedgwood ware will be opened at the Liverpool Art Club, on the evening of Monday next, the 3rd inst., when a *conversazione* will be held, at which Miss Meteyard will be present. On the same evening a club dinner will be given to Mr. Godfrey Wedgwood and other friends who have assisted the committee by the loan of examples.

Salisbury Cathedral.—The tender of Mr. Alfred Robinson, of Holborn, has been accepted by the Dean and Chapter for the screen of woodwork to be erected in the north transept for the purpose of enclosing the apparatus for blowing the organ. The designs are by Mr. G. E. Street, the cathedral architect.

Society of Engineers.—The first ordinary meeting of this society for the current year will be held on Monday, the 3rd inst., in the Society's hall, at the above address. The president, Mr. Robert Paulson Spice, will present the premiums awarded for papers read during that year, and will deliver his inaugural address.

TENDERS

For main drainage works for Bognor District, for the Bognor Local Board. Mr. Arthur Smith, architect :—

Coker	£7,820	0	0
Brass	7,349	0	0
Edmondson	7,056	0	0
Hatton & Co.	6,690	9	4
Marshall	6,668	0	0
Dickson	6,300	0	0
Young	6,134	10	0
Giles	5,838	0	0
Hayter	5,514	0	0
Dodds & Co.	5,400	0	0
Jones	5,357	0	0
Hayward (accepted)	4,876	5	0
Williams	4,200	0	0

For new Wesleyan Chapel, at New Barnet, Herts. Mr. James Weir, architect. Quantities by Mr. C. G. Maylard :—

Ansell	£9,250	0	0
Rider & Son	8,978	0	0
Hobson	8,541	0	0
Manley	8,437	0	0
Nightingale	8,201	0	0
Lathey, Brothers	8,184	0	0
Dove, Brothers*	8,025	0	0

* Accepted, with modifications, 6,200*l*.

For building a reservoir, for the Watford Board of Health :—

Turner	£6,990	0	0
Hatton & Co.	6,345	0	0
C. A. Hailey	6,200	0	0
Godwin	6,200	0	0
G. & J. Waterman	6,094	0	0
Rowland, Brothers	6,015	0	0
Pratt	5,990	0	0
Andrews & Son	5,986	0	0
Maxwell	5,890	0	0
Meston	5,750	0	0
Bell	5,585	0	0
Organ	5,450	0	0
Hunt (accepted)	5,188	0	0

Accepted for a block of offices, at Altrincham, Cheshire, for Mr. W. C. Brooks, M.P. Mr. George Truefitt, architect :—

Hamilton (Excavator and Bricklayer)	£1,280	0	0
Southern (Carpenter, Joiner, and Bell-hanger)	1,650	0	0
Patteson (Mason)	500	0	0
Ashcroft (Tiler)	161	14	0
Walton (Plumber, Glazier, and Gasfitter)	398	0	0
Flee, late Lomas (Plasterer, Painter, and Paperhanger)	436	0	0

For new parish church, Peel, Isle of Man. Messrs. T. D. Barry & Son, architects. Quantities supplied :—

Rowley & Lynex	£11,774	0	0
Carine & Goldsmith	9,600	0	0
Anwell	9,350	0	0
Black & Toul	9,060	0	0
Smith	9,000	0	0
Aspinall & Rothwell	9,000	0	0
Anderson & Radcliffe	8,910	0	0
Brown & Backhouse	8,799	0	0
Thornton & Sons	8,750	0	0
Costani	8,519	0	0
Winnard	8,282	0	0
Kinwig & Harrison (exclusive of spire)	8,455	0	0

For offices for the Croydon Commercial Gas and Coke Company. Messrs. Berney & Monday, architects. Quantities supplied by Mr. F. J. Mullett :—

Coles	£3,080	0	0
Hyde	2,997	0	0
Hart	2,790	0	0
Nightingale	2,769	0	0
Macey & Sons	2,689	0	0
Smith (accepted)	2,525	0	0

For shops, Thornton-row, Greenwich. Mr. Thomas Dinwiddy, architect :—

Bridel	£787	0	0
Tull	734	0	0
Greenwood	725	0	0
Jerrard	721	0	0
Redman	690	0	0
Hall (accepted)	675	0	0

For alterations to the Queen's Head public-house, Tower-hill, for Mr. A. S. Naylor :—

Little	£597	0	0
Beale	557	0	0
Shurmur	540	0	0

For the erection of shops, Amherst-road, Hackney. Messrs. Waymouth & Son, architects. Quantities by Mr. W. Birdseye :—

Sheffield & Prebble	£11,473	0	0
Sawyer	10,990	0	0
Shurmur	10,845	0	0

For shops and offices, No. 2 and 4, Warner-place, Hackney-road, for Mrs. S. B. James. Mr. Charles C. Pearce, architect. :—

Thomerson	£1,483	0	0
Shurmur	1,449	0	0
Jarvis & Sons	1,125	0	0

For additions to the Joint Counties Lunatic Asylum, Carmarthen. Messrs. Giles & Gough, architects. Quantities supplied :—

Baker & Son	£19,995	0	0
Jones	18,407	0	0
Phillips	15,376	0	0
Walters & Johns	14,487	10	0
Watkins & Jenkins	14,200	0	0
Stephens & Bastow	13,610	0	0
Thomas	13,564	0	0
Jones & Co.	13,375	0	0
Warburton	12,712	0	0
Davies	12,510	0	0
Appleby & Lawton	12,158	0	0

For the erection of workshops at Haggerstone, for Mr. George Beken :—

Harper	£838	0	0
Thomson & Son	803	0	0
Cole	730	0	0
Shurmur	684	0	0
Green	667	0	0
Wood	661	0	0

For the erection and completion of a warehouse, in Queenhithe, Upper Thames-street, for Mr. George Badham. Quantities by Mr. Walter Barnett and Mr. F. Thomson. Mr. H. H. Bridgman, architect :—

Wall, Brothers	£2,057	0	0
Moreland & Nixon	1,999	0	0
Adamson	1,898	0	0
Brass	1,895	0	0
Ashby	1,886	0	0
Manly	1,790	0	0
Kirk & Randall	1,783	0	0
Tarrant	1,749	0	0
Scrivener & Co.	1,743	0	0
Downs	1,733	0	0
Grover	1,696	0	0
Perry & Co.	1,680	0	0
Conder	1,598	0	0
Crabb	1,594	0	0
Hunt	1,582	0	0
Toms	1,473	0	0

For two houses and shops, Hill-street, Upper Clapton, for Mr. George Beazley :—

Somerville & Hill*	£1,045	0	0

* Amended tender, accepted.

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